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III. WEST COAST MARKET FUNDAMENTALS

This section highlights, from an industry perspective, keys to success on the West Coast: crude supply, manufacturing, product supply and commercial marketing of jet fuel, diesel and coke. Section IV puts APC's situation in each of these fundamentals into perspective.

The West Coast has historically been a unique business environment for oil companies. This uniqueness stems from the isolation of the region—bordered on the west by water and on the east by mountain ranges, and with no significant pipeline access for product or crude into the region and governed by strict environmental regulations which do not apply elsewhere. For example with the important exception of the All American and Line 90 crude pipelines, ocean going tanker is the only way to move large volumes of product or crude into or out of the West Coast. As a result, the market fundamentals impacting all major aspects of the downstream business are different from those in other major refining centers.

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Crude prices are at a discount to the Gulf Coast. West Coast manufacturing infrastructure is the most complex and sophisticated in the world—driven in part by high gasoline demand, limited local markets for residual fuel oil, tremendous demand for light products the relatively heavy crudes which are abundant in the region, and tight environmental regulations. The West Coast has historically been short light products leading to prices which trade at premium to the Gulf Coast. As a result, West Coast margins have historically exceeded Gulf Coast levels. Commercial and wholesale marketing on the West Coast is complicated by

differing supply/demand balances and product specifications up and down the coast, as well as an increasingly sophisticated customer base.

In addition to geographic isolation, unique product specifications in California for both diesel fuel and gasoline create a form of product isolation. Though refiners outside of the West Coast can and do make product which meets California specifications (e.g. Neste in Finland makes CARB gasoline for export), our local specifications create additional costs for refiners trying to serve the West Coast market.

Crude Supply

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West Coast refineries process 2.5 million barrels/day of crude. In 1995, ANS provided 52% of the crude slate, and California crudes 38%. Only 10% of all refinery crude runs were foreign barrels, as compared to 73% in the Gulf Coast. Chevron, Exxon, Tosco and APC provide the primary demand for ANS. Though on the West Coast ANS is often referred to as a "light" crude, from a world wide standpoint ANS is closer to a medium/sour crude. A variety of refiners, including Mobil (Torrance), Shell (Martinez), Texaco (Wilmington and Bakersfield), and Unocal (Rodeo) run primarily California heavy crudes, which are among the heaviest in the world.

The West Coast's distance from other major petroleum markets has historically kept crude prices - especially California's heavy crude prices lower than the Gulf Coast. The reason is simple: petroleum prices are set at a world level, with netbacks typically determined by the marginal (last) barrel. During the 1980s, the West Coast was crude long. Since it was

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(and still is) expensive to transport crudes to the Gulf Coast or alternative refinery centers, West Coast producers were (and are) willing to sell their production in local markets at a price which gives them a netback equal to or above their next best export alternative. In practice, this has resulted in California crudes priced attractively versus imported crudes, corrected for quality. Both ANS and California crude prices ~~were~~ ^{are} considered to be at "export parity".

However, as ANS declined, BP was able to drive the price of ANS toward "import parity" by exporting excess barrels to the Gulf. By 1993, ANS was pricing at parity with imported crudes from Latin America and the Middle East. In contrast, California heavy crudes continue to price at a discount because San Joaquin and OCS production still exceed local demand. The marginal barrel of California heavy crude still ends up in the mid-continent via the All American Pipeline or reaches Los Angeles by truck.

Looking ahead, the decline in ANS production will gradually drive the West Coast into a crude short position. Since ANS is already trading at parity with imported crude oil from Latin America, we do not expect ANS pricing on the West Coast to increase relative to world prices. As long as crude transportation costs remain on a level playing field, the West Coast should remain the most attractive market for ANS producers. If export transportation economics become more advantaged than they are currently, exports of ANS could begin to threaten the availability and relative pricing of ANS to West Coast refiners.

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We expect the California heavy crude discount will tend to evaporate over the next few years as the region goes increasingly short of heavy crude, and

the amount of California heavy crude "exported" to the Gulf Coast via the All American Pipeline diminishes. Efforts to increase heavy crude pipeline capacity to Los Angeles could accelerate this trend.

An additional factor affecting West Coast crude markets is crude quality. The West Coast, and [REDACTED] in particular, produce a substantial volume of calcined coke for use in the aluminum industry. The ability to make this high value product is highly dependent on the quality of ANS crude. Specifically, sulfur and metals content affect the useability and value of the calcined coke to aluminum smelters. As ANS quality continues to decline over time, the amount of "trim" crudes of higher quality needed to supplement ANS in calcined coke manufacturing will gradually increase. The challenge is to identify the trim crudes which can land on the West Coast most economically. Unfortunately, many high quality calcinable crudes do not land on the West Coast at economic prices today.

Manufacturing

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The West Coast has one of the world's most complex refining infrastructures. The complexity of its refineries is driven by the high demand for gasoline, the low demand for resid/distillates, the heavier crudes produced here and tight environmental rules. Of the 1.8 million barrels per day of capacity in California, for example, 1.6 million barrels per day is processed in coking refineries compares this 90% California coking conversion rate to Texas, where only 65% of 3.9 million barrels per day of refining capacity is in coking refineries.

As a result, the West Coast's margin curve is fairly flat. There is very little marginal capacity on the West Coast because simple, high-cost refiners such as Goldenwest and Pacific Refining have already closed. In addition, there is a high degree of balance across the West Coast refinery system, which means there is marginal capacity within any of the existing complex refineries. As a result, West Coast prices can be very volatile. Excess capacity can produce intense price wars while shortages can create attractive margins.

- For a refinery of any given complexity, margins are the key to profitability and return on assets. Breakeven refining margins tend to move together in much the same way as crude prices, with transportation economics between marginal product supply and demand setting prices and margins across refining centers. The Gulf Coast light/heavy product differential (expressed as the average of gasoline and diesel prices minus the price of residual fuel oil) is the key benchmark for global refining margins.

Historically this light/heavy product differential has been extremely volatile over time, typically trading in a range bounded by FCC (fluidized catalytic cracking) re-investment economics and operating cost breakeven (\$5/barrel). As a result, most of the time there is limited incentive to build additional complex refining capacity, but likewise limited incentive to remove capacity from the market.

Over the last decade, light/heavy differentials have traversed the entire range from \$5 to \$12/barrel.

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The light/heavy product differential translates into actual refining margins based on the upgrading capability being utilized and the crude being run. On the West Coast, coking margins are the best reflection of each refinery's gross financial performance. They ranged from \$5.00/barrel to \$11.00/barrel from 1991 to 1995, with an average of \$7.50/barrel. However, since the complexity of the refining base on the West Coast is similar across refiners, differences in individual performance are not explained solely by margins. Differences in safety, reliability, cost performance, throughput increases and scale tend to determine which refineries are most profitable over time. On the West Coast, these differences lead to a substantial range of overall profitability across refineries that have essentially similar upgrading capabilities.

Product Supply

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On the products side, since the Gulf Coast is the nearest source of incremental products, the marginal barrel of products barrel commands a price high enough to cover the transportation costs from the Gulf. West Coast product prices thus tend to be at "import parity". This is one of the major reasons why manufacturing margins on the West Coast are significantly higher than those on the Gulf Coast.

Historically, the West Coast has been short light product, particularly gasoline, creating a situation where prices are stable at levels 5 to 6 cents per gallon above the Gulf Coast. However, in 1991 the supply/demand balance shifted from short supply to excess, and has stayed slightly long ever since. During this transition period, West Coast light product prices fell to levels 2-3 cents per gallon below the Gulf Coast, stayed at that level

for slightly over a year. Towards the end of the time period, a significant increase in exports of light products out of the West Coast (combined with the shut down of some non-economic capacity in various West Coast refineries), has allowed supply and demand to remain in close balance. However, the West Coast light product balance remains a precarious one. The overall balance shifts seasonally, with the summer months in close balance and the excess product long in winter months. These supply/demand balance swings make the West Coast prices far more volatile than in other world markets.

Looking ahead, light product demand is expected to continue to grow at a rate of 2% per year through 2005, with the majority of this growth driven by gasoline. Gasoline demand is strongly driven by population and by vehicle miles traveled, which are expected to grow by up to 2% per year over the next decade, according to state and government forecasts. And when the impact of higher speed limits, consumer preferences for larger cars and sport utility vehicles, and a more robust economy are factored in, the demand outlook becomes even more positive.

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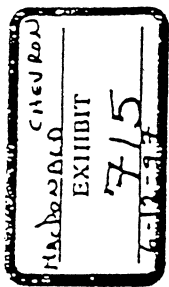
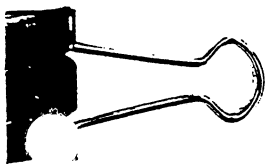
At the same time, the West Coast's capacity to manufacture light products has recently increased due to major environmental investments to make CARB gasoline at most West Coast refineries, and it is expected to continue to grow due to ongoing capacity creep (low capital capacity increases). Historically, light product make on the West Coast has grown 2.2% annually due to capacity creep, and this level of growth is expected to continue over the next five to ten years. If demand and supply growth meet expected levels, the historical pattern of balance in the summer and length in the winter will likely continue, though any significant recession or change in

demand growth could result in significant additional increases in West Coast product excess supply, putting pressure on both prices and margins, and necessitating additional exports

Exports from the West Coast to maintain the balance between supply and demand have historically been made by refiners who have some remaining, less economic refining capacity which could be used to cut crude runs and by refiners who have excess product and the ability to export that product economically. As the table below shows, this incentive is strongest for Chevron and Shell, though others have the excess supply to export product if necessary.

Further complicating light product supply on the West Coast is the existence of several distinct "micro-markets". Regionally, the West Coast is short on light product in southern California, long on light product in northern California and balanced to long in the Pacific Northwest. Additionally, CARB gasoline and diesel specifications reduce the fungibility of products within PADD V. As a result, we experience significant volatility of product pricing within PADD V as well as pricing versus the Gulf Coast. The existence of a handful of players with large supply positions in specific West Coast regions and/or products, such as APC's CARB diesel position in southern California or APC's high sulfur diesel position in the Pacific Northwest, add further to this volatility. Close monitoring of supply and demand within these micro-markets is needed to ensure that refiners react to imbalances and prevent wide volatility in the premiums realized for specific products.

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CHEVRON U.S.A. PRODUCTS COMPANY

STRATEGIC ASSESSMENT STUDY

TEAM

[REDACTED]

EXHIBIT IV.2

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U.S. DOWNSTREAM INDUSTRY PROFILE - GENERAL

- Highly competitive, low margin commodity business.
- Non customer-driven specification changes are requiring major mandatory investments.
- Selected product reformulations such as LAD and JP8 (from JP4) offer profit opportunities for well-positioned competitors.
- Entry barriers are high restricting entrance of new competitors; however, high exit barriers encourage survival of weaker refiners.
- Industry average returns approximate cost of capital; however, the best performers earn acceptable returns, i.e. >12%.
- Industry will generate long-term, sustained cash flow, although mandatory investments will absorb much of the cash over the next few years.
- Marginal refiners/marketers recover cash costs even in poor times; however, earnings are insufficient to cover capital requirements without borrowing.
- Mogas demand is growing, although at less than historic rates.
- Continued marketing restructuring with majors retreating to core markets and independents exiting business.

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U.S. DOWNSTREAM INDUSTRY PROFILE - USGC

- Large, highly-competitive refining system with relatively high yield of higher value products (chemicals, lubes).
- Refinerles linked to a large market by efficient, non-proprletary, Inter-regional distribution system.
- Active spot market with ready access to offshore markets lessens need for Integrated refining and marketing system.
- Significant amount of least efficient capacity has shut down.
- Refining capacity is spread over many competitors.

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U.S. DOWNSTREAM INDUSTRY PROFILE - USWC

USWC market appears to allow better average returns than USGC. The better performers generate ROCEs greater than 12%.

Relatively isolated market; California product specification changes may create additional import barriers and opportunities for well positioned refiners (jet, LAD).

Refining and marketing closely linked; thinly traded spot market.

Market is dominated by limited number of large, committed refiner/marketers whose individual actions can have significant market impact.

Exports becoming a more important factor in balancing light product supply and demand.

With the exception of Chevron, all major refiners process a large % of equity crude; some indication of integrated upstream/downstream economics by some California heavy crude producers.

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Energy Briefing Note

PIRA

January 17, 1996

CARB 2 GASOLINE: COSTLY, COMPLEX, AND TIGHT

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Summary

The deadline for California's new mandated gasoline, CARB 2, is fast approaching. The gasoline is more difficult to manufacture than Federal RFG but is designed to accomplish the same task - reduce ozone precursors and toxics emissions. California's refiners have invested over \$3 billion to be ready for the program's March 1, 1996 start. Will there be enough capacity? Based on a PIRA survey, Californian capability to produce CARB2 gasoline is around 900 \pm 50 MB/D. This contrasts with estimated demand of around 915 MB/D. Hence, the balance appears tight. Early inventory building coupled with supplies of either finished product or components from outside the state will likely be necessary. Prices would need to increase to attract the additional out-of-state materials. The California gasoline market should witness extensive price volatility and refiners could have an opportunity to earn a return on their investment, which has rarely occurred with other U.S. refiner environmental investments. Prices 10-15 c/gal above conventional West Coast gasoline are likely, with spikes above this at times. Such a sharp increase in California's pump prices carries risks for the industry which it needs to minimize.

Introduction

The New Year is bringing with it another new fuel, California Air Resources Board (CARB) reformulated gasoline, aka CARB 2, the costliest and most complex gasoline yet. This Briefing Note outlines the program, reviews California refiners' readiness, and assesses the implications for margins. The review is based on a refiner survey that PIRA conducted by phone between September and November 1995. The results from this follow-up to our third quarter 1993 survey cover around 90% of crude distillation capacity and nearly all the upgrading units, with just one instance where PIRA had to incorporate earlier estimates, updated using other sources.

Program Timing

The CARB 2 gasoline program was adopted in November 1991 for 1996 implementation. There were significant startup problems associated with the 1993 introduction of California's special low sulfur diesel program. To avoid that happening again, CARB has been working closely with refiners as the deadline approaches, monitoring their readiness. One consequence of this is that the program has been delayed and switched to a phased-in startup that allows ample

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time for inventories to be built. Thus, the mandated dates for the different industry segments to move to the year round CARB 2 gasoline program are now:

- Refiners: March 1, 1996 (from January 1).
- Terminals: April 15, 1996.
- Retail: June 1, 1996.

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The state has also been testing whether the new fuel will damage car components, as low "S" diesel did. So far, there have been no statistically significant problems. However, consumers only care that *their* car runs. Even a few problems, if magnified by press coverage, could present difficulties for regulators and the industry, especially in an election year.

- Figure 1

CARB 2 Specifications

Specific Limits

CARB 2 gasoline has more restrictive quality specifications than any gasoline introduced or planned for anywhere in the world, although British Columbia (Canada) has just announced a program modeled on CARB 2 and RFG, albeit toned down and with no oxygenate mandate. California has taken the federal rules for RFG a significant step further with the substitution of specific (and generally tighter) limits for five properties that are either formula based (aromatics), performance based (sulfur, olefins, T90), or not even defined (T50) for simple model Federal RFG (Figure 1).

CARB has again given small refiners some compliance latitude, allowing them a two year extension, until March 1, 1998, for meeting the new sulfur, olefins, T50 and T90 specifications. Compliance on aromatics, benzene, oxygen and RVP is required at the same time for all refiners, large or small. Because of closures, there are now only two gasoline producing refineries that qualify as small: Paramount and Kern.

This compliance latitude therefore has little bearing on either CARB 2 supply or on air quality.

	U.S. BASELINE	PER GALLON LIMITS PHASE I U.S. 1995*	PHASE II CALIF. 1996
RVP, psi	8.7	7.2/8.1	7
OXYGEN, wt%	0	2	2**
AROMATICS, vol%	32	Formula	25
BENZENE, vol%	1.53	1	1
OLEFINS, vol %	8.2	'90 avg (10.8)	5
T90, deg. F	330	'90 avg (332)	300
T50, deg. F	218		210
SULFUR, ppm	338	'90 avg (338)	40

* Simple Model
** Sulfur, Less & Possible
--- Refinery's Annual Average (Standard)

Figure 2

	FLAT LIMIT	AVERAGE	CAP.
RVP, psi	7	---	7
OXYGEN, wt%	1.2-2.2	---	2.7*
AROMATICS, vol%	25	22	30
BENZENE, vol%	1.0	0.8	1.2
OLEFINS, vol%	5.0	4.0	10.0
T90, deg. F	300	290/310	330
T50, deg. F	210	200	220
SULFUR, ppm	40	30	80

* Winter

As with RFG, companies can take an averaging approach, but the specification limits are then tightened considerably and maximum values are introduced. (Figure 2). The rolling semi-annual averaging can be applied to any or all components with the sole exception of RVP, which always retains its flat 7 p.s.i. limit.

Predictive Model Adds Flexibility

The manufacturing flexibility for CARB 2 goes beyond this averaging. The key feature of California's program is that it is emission reduction driven, with the set limits in effect a fallback option. Any gasoline that, according to CARB's mathematical model, is predicted to equal or better the emissions from a gasoline with CARB 2's specific limits becomes a complying gasoline, even if the levels of some properties deviate from the set flat or averaging limits. This approach puts California almost two years ahead of the EPA, which will not change to its predictive model for RFG, the Complex Model, until 1998.

CARB's model, developed with refiner involvement, is particularly sensitive to sulfur and T50. Lowering these can result in gasolines that are CARB 2 compliant but could have too little oxygen to be RFG compliant too, an issue in Southern California and Sacramento (see later).

PIRA Survey Results

Capital Investment

The surveyed refiners have invested a staggering \$3.4 billion, or \$4,000/daily gasoline barrel, to achieve CARB 2 compliance. This total is around \$500 million lower than previously expected due to aggressive cost reduction programs, with the main savings coming from the cancellation of several alkylation facilities. Companies cited the predictive model as substantially aiding their ability to make savings. This confirms the cost effectiveness of this more flexible approach. Companies continue to study how the model can help, so further reductions in operating costs or future capex are likely.

Investment levels were quite disparate among companies, varying from as little as \$100 million to as much as \$1 billion, depending on the type and number of new process units required. Companies at the high end of the cost range were extensively modifying their refinery(ies), including adding new alkylation, isomerization, and/or coking, and generally going beyond simple CARB 2 compliance. In the survey as a whole, process unit choices included:

- Fractionators for naphtha feed, reformat, T90 control, cat naphtha or RVP control.
- Benzene saturation.
- Alkylation and/or C₄/C₆ isomerization.
- Hydrotreating for one or more component streams, in some cases accompanied by hydrogen units and even sulfur recovery units too.
- Oxygenate capacity.

In addition, utility and offsite improvements were necessary in many cases, as were more sophisticated blending operations

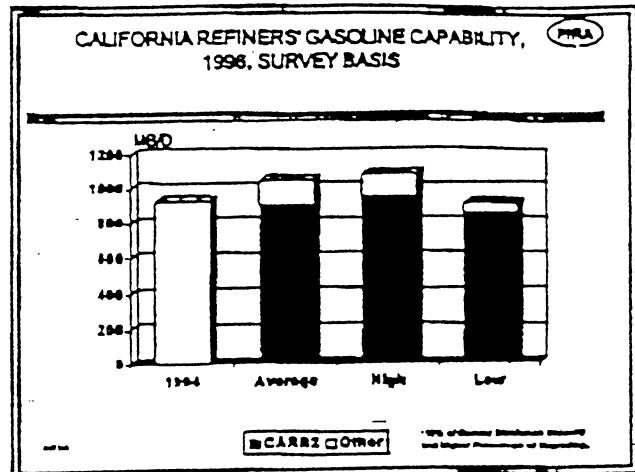
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Another reason for the range of investment levels is the difference in the percentage of gasoline targeted to be CARB 2. This varied from 50 to 100% with an average of around 85%. California will still have conventional gasoline for markets outside the state.

CARB 2 Supply Potential

The surveyed California refiners should be able to produce around 900 ± 50 MB/D of CARB gasoline, (before allowing for turnarounds or accidents) with the variation depending upon relative economic incentives to produce different refined products, operational constraints or requirements, and the performance of new units (Figure 3). This estimate is based on the survey participants' plans for oxygenate concentration and includes baseload volumes of components, such as MTBE, from outside the state. It excludes three possible additional sources of CARB 2 supply. Firstly, supplies from California refiners not surveyed. Secondly,

Figure 3



contingency in-system volumes that California refiners could supply from outside the state. Thirdly, finished spec gasoline or components from non-Californian refiners. Supplies from these latter two categories are dependent on there being an economic incentive to compensate for their costly movement. PIRA has not performed a detailed analysis of all these additional sources but estimates they could expand CARB supplies by around 15-50 MB/D, at a price. Offsetting this increment are accidents and planned turnarounds, which have not been allowed for in what is really a stream day estimate.

There will be seasonal variations in the supply potential. Higher RVP and oxygenate standards in the Winter result in 5-10 % more supply capability then versus the summer. However, because of RVP limitations, winter grade material cannot be stored for summer use.

Conventional Gasoline Supply Holds Steady

The surveyed refiners should be able to produce around 1050 ± 40 MB/D of gasoline in total in 1996, an increase of around 80 MB/D from their pre-RFG 1994 capacity levels. Thus, investments have been designed to make up for the volumes lost due to recent refinery closures and allow for demand growth. Subtracting the planned RFG volumes shows conventional gasoline capability of 140 ± 10 MB/D. Adding in an allowance for non-surveyed refiners raises this to around 150 MB/D. These volumes confirm that refiners plan on maintaining their out of state market position either directly or via exchanges. In one widely publicized long term arrangement, Chevron will supply Tosco with 30 MB/D of CARB 2 in exchange for an equal volume of conventional gasoline.

Demand Growth

California's economy is bouncing back after a long slump. Rapid growth is occurring in entertainment, advanced technology and trade oriented industries. This has offset most if not all, of the massive employment decline resulting from the downsizing of the military and other sectors. The pace of outward migration of the middle and upper middle class has abated. According to various analysts, the state's economic growth should outpace the nation's in 1996. The state has also just raised speed limits.

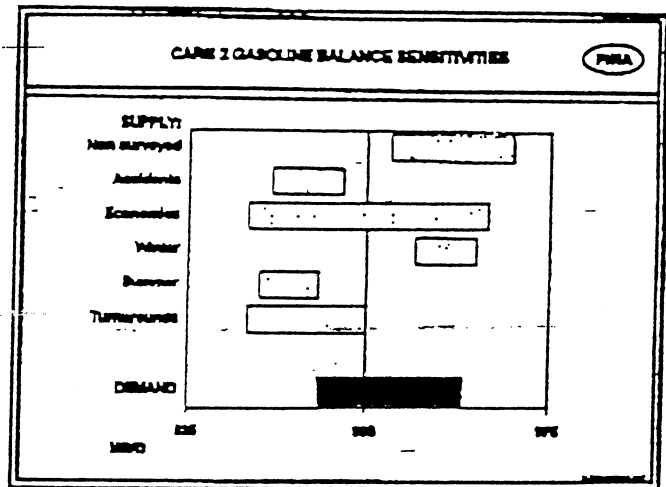
Offsetting these growth positives are efforts to reduce vehicle use for environmental reasons, growth in telecommuting, and higher retail prices resulting from the use of the costlier CARB2 gasoline. Nonetheless, the net result is growth. PIRA estimates Californian gasoline demand will be around 910 MB/D in 1996, 1% higher than in 1995. As is the case elsewhere in the States, demand is summer peaking.

A Tight CARB 2 Balance

The CARB 2 gasoline market will be tight. Our survey indicates the market is balanced on a steady state basis (Figure 4). However, refiners will need to produce in the upper half of the range of their capabilities and/or out of state supplies will be needed in the summer, (which in California starts in March/April and extends to the end of October), during turnaround seasons, or when there are refinery problems. The tightness of the balance suggests that turnarounds will never be planned for the summer.

To overcome potential problems in the introductory phases, refiners will need to build inventories during the phase-in period and hope that all units function without problem. The spring turnaround season (see PIRAFAX on U.S. Refinery Turnarounds, Jan-June 1996) should be largely completed around the time the program starts, so should not further complicate CARB 2's introduction.

Figure 4



Supplying Conventional Gasoline

California refiners have played a key role in supplying Arizona, Nevada and Oregon, conventional gasoline markets that have little or no indigenous supply. Around two-thirds of Arizona's supply (65-70 of 110 MB/D) and nearly all of Nevada's (50 MB/D) comes from California. The balance of Arizona is supplied by Santa Fe Pacific Pipeline from El Paso, Texas, fed by New Mexico and west Texas refiners. Recently, Diamond Shamrock started a new

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pipeline from McKee, Texas (Panhandle) to El Paso. Also, Longhorn plans to reverse an Exxon crude oil pipeline and put it into product service by 1997 and extend it to El Paso, enhancing Gulf Coast refiners' ability to ship west. There will inevitably be more competition in the Arizona market, but indications are that California refiners are not ready to cede this nearby market. This implies downward pressures on conventional gasoline, particularly from next year on, with the fortunes of the Californian and Gulf Coast refiners more closely tied together.

What If Something Goes Wrong? ... Variances

What happens if a refiner has a problem supplying CARB 2? Many CARB officials now believe that the market place should be the final arbiter to the extent possible, i.e., if a company has a supply problem, it should attempt to obtain complying gasoline from others first. This might work in an oversupplied market, but what happens if the market is steady state balanced? Supply disruptions result in price spikes that the public, and ultimately politicians, react negatively to. Yet allowing non-complying supplies to be used raises issues of equity and fairness to those companies that make investments, follow the rules and are ready to supply complying product. This is the same dilemma refiners, marketers and CARB confronted during the introduction of CARB diesel in October 1993.

CARB's response has been to propose a variance procedure that will likely be finalized soon. Variances, if granted, would be for a very specific time period and volume and cost 15c/gal; 10c for CARB's estimate of the highest relative production cost of CARB gasoline plus a 5c penalty. Under the proposal, a variance to supply non-complying gasoline would only be granted if:

- The supply problem is due to conditions beyond a company's reasonable control.
- The company has explained its reasons, publicly and privately, established when it will be able to supply complying material, and submitted a detailed compliance plan. Indications are that the burden of proof will be quite rigorous.
- The economic consequences for the company and the public outweigh the air quality effects.

Situations where the need for a variance is not immediate and emergency situations due to accidents or other "physical catastrophes" are treated differently. The former would involve sufficient notice (10 days) to interested parties, and public hearings, while the latter, theoretically, could be accomplished within 24 hours through conference calls with affected parties.

The Largest Oxygenate Market

With CARB gasoline, California's oxygenate use will rise by around 35%, to some 100 MB/D of MTBE equivalent. This enhances California's position as the largest U.S. oxygenate market, (it is also the largest gasoline market), raising its market share to almost one quarter, with its share of the MTBE market even higher. With CARB 2, the California oxygenate market will also move from winter to summer peaking because year-round use becomes statewide instead of just applying in southern California, as has been the case since the introduction of

RFG at the beginning of 1995. For over two years prior to that, the market was highly winter peaking due to the October 1993 start of the oxy-gasoline program.

This estimate of oxygenate demand is based primarily on the survey responses on concentration. Potential health effect issues are still overhanging the whole U.S. ethers market, implying some downside risk to the estimate. Additional downside risk comes from the question of whether the oxygen requirements for RFG in California will continue to be mandated.

MTBE has been the dominant oxygenate. With little local capability, most is imported, primarily from the Gulf Coast and Canada. Ethanol also plays a role, especially in the north, but it is mainly suitable for winter use due to its high volatility. Although several companies have installed ether capability in preparation for CARB 2, imports will continue to predominate.

Oxygen Content - Can The Rules Change?

While the state, via CARB, has authorized the use of a predictive model which, theoretically, makes it possible to manufacture a complying gasoline without the need for an oxygenate, there are other applicable rules that take precedence. For example, during the winter carbon monoxide (CO) control periods, a 1.8-2.2 wt% oxygen level, equal to the nominal CARB spec, will continue to apply. These periods are:

- Oct. 1 - Feb. 28: Los Angeles area and Ventura County
- Oct. 1 - Jan. 31: Northern California
- Nov. 1 - Feb. 28: San Diego and other Southern and Central areas.

In addition, Federal RFG rules mandate oxygenate use in Southern California and are scheduled to apply to Sacramento too, due to its growing ozone problem. The refining industry and CARB are trying to get this RFG oxygenate standard lessened to voluntary from mandated. EPA does not believe it has the authority to make this change but it has received a legal brief from the Western States Petroleum Association (WESPA), justifying why it could. EPA is now in the process of evaluating this, but the possibility of a decision before the start of the CARB gasoline program is receding, in view of the government's recent shutdown.

Some refiners already plan to cut the concentration of oxygenates in CARB gasoline in the summer in the region north of Sacramento, where RFG is not required. This again underscores the scale of the economic benefit offered by the Predictive Model since the additional grade makes distribution complex. Should EPA agree that the oxygen limit in RFG is voluntary in relation to CARB 2, PIRA expects other refiners to cut back too. Refiners will not stop using oxygenates since they provide multiple benefits through their quality - high octane, no sulfur, no olefins and favorable T50 blending, - and their potential as volume extenders. These potential oxygenate reductions further raise the probability of CARB 2 tightness.

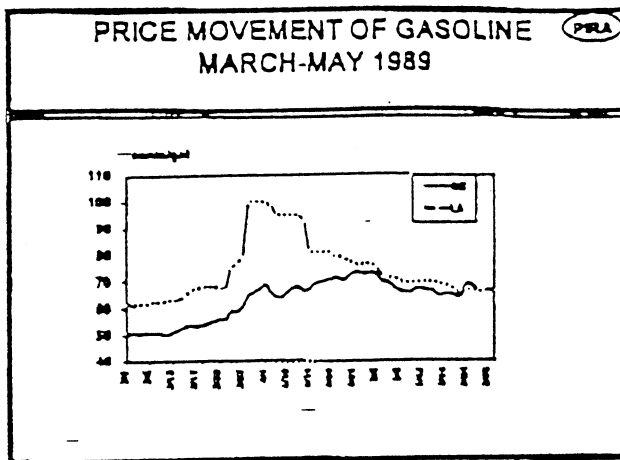
Margin Implications

Will California refiners achieve something that has rarely been seen in the U.S. - a reasonable return on new capital investment related to environmental programs? Generally, the U.S. refining industry has overbuilt, whether for oxygenates, low "S" diesel or RFG. This time may

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be different. The CARB 2 balance appears to be tight in California. Add in the remoteness of the California market, the unique characteristics of CARB 2, the requirement for domestic shippers to use higher cost Jones Act shipping, and the small number of companies involved, all of whom share a motivation to recoup costs and not undermine the market. The implication is that prices on average will do quite a bit more than cover marginal costs, which will mainly comprise the incremental oxygenate cost, although not during the extended phase-in period. Will companies raise pump prices before June 1st?

Figure 5



The market is not without options, at the right price. There is a steady trade of MTBE from the Gulf that would be used for incremental supply. Likewise a price spike would attract either finished product or components from unexpected places. Remember what happened to California gasoline prices after the Valdez oil spill in the Spring of 1989 closed the port and refiners could not quickly obtain alternative crude supplies. Spot gasoline prices jumped to around \$1/gallon, when the Gulf Coast was trading around 65c/gallon. Sufficient incentives were created to attract product from new locales, quickly eroding prices (Figure 5). Thus the combination of variances and market forces will act to dampen a price spike but nevertheless leave those Californians able to supply complying product amply remunerated.

Could all this be too good to be true for refiners? Possibly. CARB's expectations seem to be for a CARB 2 gasoline differential to non-RFG averaging around 8c/gal. Differentials of that magnitude when RFG was introduced contributed to the wave of opt-outs, yet CARB believes they would be manageable in a Californian context. However, CARB's assessment of the differential between CARB 2 and conventional gasoline looks conservative. A 10 to 15c gal difference is likely, with the spread wider at times. Even if conventional gasoline prices soften, this implies a sharp increase in Californian pump prices in an election year. The industry's P.R. machine needs to be ahead of the curve on this issue so that there is an appreciation of the benefits and not just the cost of CARB 2 gasoline.

Note: Additional coverage of gasoline and oxygenate related issues can be found on PIRA Online.

PIRA Energy Group

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NEW YORK, NEW YORK 10168-0012
TELEPHONE: 212-687-0174
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33, RUE GALILEE, SUITE 40
75110 PARIS FRANCE
TELEPHONE: 331-4443-5348
FAX: 331-4443-5258/4723-6814

COMPETITOR INTELLIGENCE INFORMATION FOR THE DECEMBER 14 EL SEGUNDO REGIONAL COORDINATION MEETING

Note: This information is gleaned from industry publications and employee contacts with outside companies and may not be entirely accurate. (All of this month's data is sourced from OPIS unless otherwise noted.)

General

- **Refining/Marketing/S&D:** A senior energy analyst at the recent API convention warned that if the U.S. petroleum industry doesn't reduce its refining capacity, it will never see any substantial increase in refining margins, pointing out the recent volatility in refining margins over the past 12 months. U.S. average refining margins were sitting at the break-even point of \$3/bbl in March, surged to \$6/bbl in May, then dropped to 50cts/bbl in September before crawling up to the present margin of \$2/bbl. In the last nine months, gasoline demand has been healthy and inventories have remained close to record lows, factors that should normally lead to higher prices. However, refining utilization has been rising, sustaining high levels of operations, thereby keeping prices low. *Implication: in what alternate modes can the refinery operate given low-margin economics?*

Unocal

- **Refining/Marketing:** Unocal is exploring sale of three refineries and 1,441 gasoline stations in California due to low West Coast refining margins and high capital expenditures required to comply with stringent environmental regulations. Unocal is also exploring introduction of an unbranded mogas supply to move incremental mogas from their refineries. They would provide this to existing branded jobbers who now turn to suppliers like Ultramar, Tesoro and Tosco for supplemental mogas supply.

Ultramar

- **Marketing/S&D:** Ultramar approached our S&D traders to see if we would give them CARB PUL in exchange for CARB RUL and a differential. We told them that we cannot commit to any deal until we have experience manufacturing CARB mogas. *Implication: this could be a profitable way to use any excess octane strength at El Segundo.*
- **Marketing:** Ultramar announced on Sep 12 that they plan to spend \$125 million to add 125 company-owned outlets to their existing 146 in California, according to Platt's. This growth plan will leverage off their refining strength, where they have excess production capability compared to branded sales volume.

Tosco

- **Marketing/S&D:** Tosco will attempt to increase market share and expand into new retail markets over the next three years, according to a Tosco report given to financial analysts. They will invest \$200 million to build 50 new state-of-the-art retail outlets on the West Coast by 1998, and upgrade 350 existing West Coast sites with 'pay at the pump' card readers, car washes, new imaging, and C-stores.

Tomen-Pacific

- **Marketing/S&D:** Tomen-Pacific, once a very large presence in the West Coast (WC) cargo market, is planning to shut its WC operation by the end of the year. Evidently, poor WC economics, coupled with decreased cargo activity from the Pacific Rim and the WC have prompted their decision. Tomen is the latest in a series of high-profile companies to retreat from the WC (e.g. Wickland, EOTT, Tosco, Powerine, and Pacific Refining). *Implication: consolidation of trading offices could reduce spot market liquidity and affect pricing. Also, weak West Coast margins may continue to force industry rationalization.*

To: [REDACTED] ke
From: [REDACTED] *Jim*
Date: May 16, 1995
Subject: CARB Outlet Strategy Meeting

Attached are several background items and a couple of in-progress spreadsheets regarding outlet opportunities for CARB mogas. I thought you might want to review the data prior to our meeting Thursday. I would like to use our meeting discussion to expand /complete the spreadsheets for management review.

The CARB Mogas Outlet spreadsheet identifies CARB production, existing contract commitments and remaining avails. It also lists a number of potential outlets for the available barrels and attempts to capture positive and negative sensitivities about each outlet. For our discussion, I would be interested if you have ideas on any additional outlet opportunities or additional sensitivities.

The Strategy Cases spreadsheet is mostly incomplete at this stage, however, what it attempts to depict is how we would prioritize our outlet opportunities in various market scenarios. I am not necessarily convinced that we will have drastically different outlet strategies, however, I think we should consciously address how we would want to react in various markets. I attempted to fill in some data that seemed obvious but its all up for discussion at the meeting.

Look forward to seeing you Thursday, thanks.

TOWN

250 KBM - Tower
250 KBM - Shell N/S - rock
100 KBM - Trade/Sell

Tepco CARB in
SFB?
OK Seafarer on
W. Coast ships

EXX00001625

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Supply Operations - West Coast
CARB Mogas Outlet - DP&A Outlook
 Discussion with [REDACTED], 5/15

Overall Supply / Demand Balance

- California net short of CARB mogas / components
- Price outlook driven by cost of imports from Carib basin; outlook +10¢ versus current conventional (16¢ versus future conventional due to conventional price drop)
- California producibility roughly in balance but unbalanced component makeup

Inbound	Outbound
CARB Mogas	Conventional mogas
ALK8	T-90
MTBE	
- Full investment in conversion of capacity would make California balanced
- CARB will likely come in from the PNW since marginal economic performers there (Shell Anacortes, Tosco Ferndale) will press to find ways to squeeze margins up; may be as much as 30-35% producibility without impact to their statutory baselines

SFB Supply / Demand Balance

- SFB remains net long in mogas - both CARB and conventional
- BE likely to be primary spot market producer based on investment and marketing strategy of other SFB players
 - Chevron** - significant investment - net long; balanced with sale to Tosco
 - Unocal** - balanced to slightly short
 - Pacific** - no investment, no known outlet
 - Tosco** - permits received with no investment progressing; entered into 30kBD purchase from Chevron; outcome of Arco processing deal in doubt
 - Arco** - Appears very short in SFB; may have done N/S trade with Shell but still shopping for a large barrel SFB deal; may be leverage - still has option on Tosco processing agreement
 - Shell** - long SFB but balanced overall on WC - may have traded with Arco although probably still short in LA

Conventional Mogas Valuation

- Conventional mogas will go north, likely from SFB, to backfill CARB mogas brought in from PNW; not likely to be 1 for 1 since PNW net long mogas when in full conversion; marginal conventional mogas price will fall to its export value (-6¢ versus current conventional)
- SFB is likely to be lowest value market, as it currently is, caused by greatest length; expect current price to drop to Far East export but North / South price relationships should remain (SFB -3¢ vs LA/PNW)

EXX00001626

DRG-DPAOUTLK.DOC

05/15/95

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General Strategy Considerations

- Should not do deals that supports other's importing barrels to West Coast
- Desire to build ALK8 for contingency should be weighed against market revenue factor-impact from ALK8 sales if end up with ALK8 length (ALK8 sales = + CARB mogas)
- Purchase marginal strategy may not be beneficial if we already dominate spot market supply; we would essentially chase self
- Strategic benefit from long-term participation in LA market; stronger chance LA will experience periods above transportation parity; shrinks SFB market; creates alternate price basis for some barrels; establishes ongoing infrastructure to capture price run-up opportunities; serve to minimize on-going presence of Carib basin refiners
- Outlet of T-90 onto West Coast would have same impact as plus mogas; export to Far East would help overall West Coast mogas market although naphtha markets weak in Far East versus distillate; strongest value for T-90 may be to HCU with backed out LCCO combined into a higher value distillate for Far East export

EXHIBIT IV.6

215

HIGHLY CONFIDENTIAL

From: [REDACTED] CCFXGTW1
 Date: 5/26/95 8:58 AM
 Priority: Normal
 Receipt Requested
 TO: [REDACTED] T [REDACTED]
 TO: [REDACTED] at [REDACTED]
 TO: [REDACTED] at T [REDACTED]
 TO: [REDACTED] at [REDACTED] 01
 TO: [REDACTED] at [REDACTED]
 TO: [REDACTED] at [REDACTED] 1
 Subject: CARB GASOLINE

----- Message Contents -----

To: [REDACTED] [REDACTED] [REDACTED] T
 cc: [REDACTED] [REDACTED] [REDACTED] S
 [REDACTED] [REDACTED] [REDACTED] ER
 [REDACTED] [REDACTED] [REDACTED] Y

FROM: [REDACTED]
 Subject: CARB GASOLINE
 Got [REDACTED] of the Business Optimization Team working up a spec sheet.
 Will forward when that's done.

However, believe that most economic import will be alkylate. We expect that the USWC will be long conventional gasoline and that alkylate imports could work to blend those components to CARB. Have been talking to Fairfax about avails ex Beaumont and Yanbu.

Wow More Customers, Have More Fun

Team Mobil West Supply & Logistics

Torrance [REDACTED] 4
 *** Forwarding note from [REDACTED] 95/05/23 18:51 ***

From: [REDACTED] 1995/05/23 18:51
 cc: [REDACTED]
 cc: [REDACTED] at [REDACTED]
 Subject: CARB GASOLINE
 To: [REDACTED] 1
 cc: [REDACTED]

----- Message Contents -----

From : [REDACTED] Subject: CARB GASOLINE Roger,
 any chance you could fax a spec sheet or whatever you have on CARB gasoline qualities...we're looking to see if Coryton could help out in any way!

Regards

[REDACTED]
 MEL Manufacturing, Room [REDACTED]

=====REPLY=====

Through the various conversations, I think the message has gotten a little confusing between what we saw as a current opportunity for CHM or BMT CARB diesel, and possibly a future opportunity for CARB Gasoline components. I will elaborate for a few paragraphs and probably tell you more than you want to know.

To my mind, the discussion is really this:

Depending upon the S/D balance, it probably will NOT make sense to import finished CARB into what has historically been an isolated, near balanced/long market. As you probably know, US West Coast margins are on average more attractive than most other US regions. Flooding the market and depressing margins on the base volume we market would likely be a big hit and not in Mobil's interest.

However, since there is uncertainty about CARB supply/demand in the market, and

MOB 02378

By 1981 soon have unique fuels formulations, I anticipate a high probability of market upsets when there is a WC Refinery problem, etc. Coincident with market perturbations, I think it would make sense for Mobil to have plans in place to react ASAP and capture forward sales (while drawing from finished inventory) if there is sufficient reward, and I think there will be.

As opposed to importing finished CARB, I would think a strategic plan to relocate key components (namely alkylate) MAY make sense, particularly if we can identify an economic backhaul. If the logistics of such a plan work and make sense on a low volume/infrequent basis, we could be set to react if the market dictates, both to cover our commitments in case we are the ones with the Refinery/supply problem, or quickly lock up any lucrative opportunities when the market is upset.

CARB SPECIFICATIONS

As to the CARB specifications, there is still uncertainty but I think it will work as follows:

Here in Torrance, we will have flexibility within the CARB model to vary/trade-off some of the components based upon equations in the model. Basically, the model predicts/controls VOC's, Toxics, NOx, O3, and CO. Because we will produce lower Sulphur and Benzene we should be able to have some flexibility in our benzene, MTBE and T90 and stay within the model. We are working on understanding all of that now.

However, for fuel not produced within California, it is likely the regulations will impose a more strict standard. Current thinking is that the limits for imports will be as follows:

RV9, (max; psi)	7.0
Sulphur, (max ppm)	40
Benzene, (max vol%)	1.0
Aromatics, (max vol%)	25.0
Olefins, (max vol%)	6.0
Distillation (max deg F)	
T90	300
T50 (min/max)	170/210—
Oxygen, (wt%)	1.8
min	2.2
max	

Having said all of this, I am happy to hear all ideas, but really depend upon our SSL folks in Torrance to work the issues. We have discussed here a number of times and they clearly feel accountability for covering our marketing demand and being prepared for any openings the market gives up. Therefore, I am copying this note to Messrs [REDACTED] in Torrance as I know they are currently identifying and considering options. Also, if I have misstated any of the facts I will ask Dave to make the necessary corrections and clarify our understanding.

In order for this to make sense for both parties, one of the keys (and perhaps a show-stopper) is that there needs to be an economic backhaul arrangement to defray part of the transportation expense. That may not be feasible, but should be explored.



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TEX 0095246

[REDACTED]

December 3, 1992

Page 2

Currently, ARCO, Chevron, Shell, Exxon, Tosco and Ultramar have either announced plans to modernize their refineries for clean fuel projects or have begun taking steps to secure the necessary permits to retool their refineries.

I brought this to your attention because of the specific reference to Texaco, and because I am convinced that at least Shell intends to address this issue if necessary. As you remember, similar concerns were echoed by the ARCO plant manager from Carson at a refinery managers meeting in April.

We will keep you abreast on any further developments on this matter and will closely monitor new bill introductions which begin the first week of December. If you should have any questions, please don't hesitate to contact me.

[REDACTED]

[REDACTED]

cc:

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

APC MUST BECOME AN ACTIVE MARKET PLAYER, PREPARED TO EXPORT WHEN EXPORT PARITY THREATENS

- APC's manufacturing profitability depends critically on maintaining import parity—APC and Chevron have the most to lose from a price war
 - \$8 million/week for APC manufacturing
 - Potential retail overflow

• Since APC is short in the Bay, and short overall, APC should not export first—others should be forced to behave rationally

• Most of the time, APC believes others will act rationally and ensure market balance

• APC must monitor conditions to anticipate potential collapse to export parity

• Should the market move to export parity, APC should be prepared to export to help balance the market

- If others are already behaving rationally ...
- ... and if APC's contribution can make a difference

- From time to time, APC may need to endure brush fires to discipline the market

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ARC 000011672

THE ALTERNATE APPROACH WOULD BE TO PUSH THE MARKET TO RATIONALIZE

- Since APC has high margins and relatively low cost, APC can endure a sustained spot price war
- APC should use this winter as an opportunity to enhance market discipline
 - Drive down spot prices to export levels
 - Produce resids to the detriment of marginal players
- As the market stays at export parity levels, others will be forced to rationalize
 - Chevron, Shell, Texaco Anacortes, and Tosco will cut runs
 - Exxon, Tosco, Chevron, Shell, Mobil and Texaco will export
 - Tosco NW and Shell NW will evaluate closure
- However, we believe that the cost of driving rationalization could easily top \$300MM
- Moreover, since the market understands APC's incentive to export, they may take the fight to the street before they comply

ARC 000011673

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 WE BELIEVE THIS APPROACH IS TOO EXPENSIVE AND OFFERS
 TOO LITTLE LIKELIHOOD OF SUCCESS TO PURSUE.

ARCO PRODUCTS COMPANY

84

APC WILL ALSO NEED TO BE AN AGGRESSIVE MARKET PLAYER AT THE MICRO-MARKET LEVEL

- Focus barrels in strategic micro-markets
 - Product: e.g. CARB diesel, high sulfur diesel, CARB gasoline
 - Geographic: e.g. south vs. north, specific supply points, etc.
- Manage local supply/demand balance on an integrated basis to maximize APC profitability
 - Channel selection
 - Price/volume tradeoffs for region
 - Optimal product slate to fit strategic market view
- Create/capture opportunities across markets
 - Move product between markets to capture or maintain uplift
 - Move product between refineries to manufacture uplift
- Exchange and trade selectively to preserve market discipline

ARC 000011674

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APC SHOULD APPROACH THE SPOT MARKET STRATEGICALLY

Spot Trading Guidelines

- APC may profitably sell into the spot when majors are short due to disruptions in normal supply and when the market is net short
- We should look for the price to move 1-2 cpg above import parity before we act
- In these cases, APC should trade the barrels into the market gradually to capture upside
- APC should also use these opportunities as leverage during winter months, balancing barrels at attractive differentials
- APC can also take advantage of discrepancies across markets, to the extent manufacturing flexibility allows
- APC should participate in the market in ways that limit pure trading play
- We should develop performance measures to evaluate both trading effectiveness and market impact

ARC 000011675

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**SPECIFICALLY, PRODUCT SUPPLY HAS A ROLE TO PLAY IN
MONITORING AND MAINTAINING BALANCE IN THE WEST COAST**

MONITOR SUPPLY / DEMAND	TRACK COMPETITOR ACTIVITY / BEHAVIOR	TAKE ACTION
<ul style="list-style-type: none"> Track pricing trends and movements Understand competitors market position (i.e., who is long / short in specific products) and strategies Forecast changes in market supply and demand 	<ul style="list-style-type: none"> Monitor export activity Understand trading behavior 	<ul style="list-style-type: none"> Export to keep the market tight Execute appropriate spot sales if APC is long in tight market

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ARC 000011676

ARCO PRODUCTS COMPANY

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PRODUCT SUPPLY WILL ALSO NEED TO DEVELOP THE ABILITY TO TRACK AND MANAGE MICRO-MARKETS

CAPABILITY	DESCRIPTION
<ul style="list-style-type: none"> Competitive Intelligence 	<ul style="list-style-type: none"> Manufacturing volumes by product spec Turnaround activity Barrel movement/tendencies (spot, retail, unbranded rack, etc.)
<ul style="list-style-type: none"> Export Activity 	<ul style="list-style-type: none"> Exports by product / grade Who's exporting and why? Volumes Product movement timing
<ul style="list-style-type: none"> Import Activity 	<ul style="list-style-type: none"> Imports by product / grade Who's bringing it in and why? Prices Who moves the product locally?
<ul style="list-style-type: none"> Demand 	<ul style="list-style-type: none"> Track product disposition by grade Stay abreast of demand levels and changes

ARC 000011677

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ARCO PRODUCTS COMPANY

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EXHIBIT IV.9

225
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Author: Charles R. Morgan at TORMFG-PO1
Date: 2/3/96 3:20 PM
Priority: Normal
TO: Carolin A. Keith
Subject: Re[2]: POWERINE CARB SMALL REFINER STATUS
----- Message Contents -----

Carolin.....Good response. Just one small correction- the small refiner can only get a max of 2 years exemption- one year at a time. Must meet all CBG specs by March 1998.

Chuck

Reply Separator

Subject: Re: POWERINE CARB SMALL REFINER

STATUS

Author: Carolin A. Keith at TORMFG-PO1
Date: 2/3/96 3:09 PM

Anne,

We were wrong in our explanation regarding the small refiners exemption. If a small refinery is granted a 3-year exemption, it will still be allowed to produce AND sell in California. It must meet 4 of the 8 exemptions and then it can be sold in California along with the CBG. Regarding testing of CBG...most of the enforcement will take place on the refinery end of things. If, however, a station is tested and their product exceeds the cap (there is an allowance for averaging gasoline produced, so a cap has been set to determine a point above which a gasoline cannot go and stay within the CBG averaging allowances), they and their producer/provider will have to show a papertrail on the product to determine if any of the "exempted" refineries's product explains for exceeding the cap.

To date, none of the small refineries have been exempted...we should know within the next week or two if any are granted.

And, all refineries can still produce non CBG to sell in other markets (e.g., we will not sell CBG in Phoenix).

I plan to correct this and answer a few other questions in a followup mime that will go out to all briefing attendees sometime between now and the 15th..

QUESTION: I will be providing "camera" ready pieces for both mailings to SBC and dealers. Who should I deal with in your department for copying and distribution? Also have the pocket cards now and suggest that they be included in the SBC mailing. Marie Mull suggested that Denise Sofka was looking for additional work...but that's entirely your call. Don't want to get in the way of your plans there. I could probably get someone started now if they had time and then feed them the pieces as they get finalized. Let me know what you think.

Thanks!
CAK

MOB 17682

Author: Anne M. Fetsch at TORMFG-PO1
Date: 2/6/96 10:53 AM
Priority: Normal
TO: Carolin A. Keith
Subject: Re[2]: POWERINE CARB SMALL REFINER STATUS

----- Message Contents -----

Carolin,

Thanks for the update...Denise can work on that for now. Thanks for your assistance. Anne

Anne,

We were wrong in our explanation regarding the small refiners exemption. If a small refinery is granted a 3-year exemption, it will still be allowed to produce AND sell in California. It must meet 4 of the 8 exemptions and then it can be sold in California along with the CBG. Regarding testing of CBG...most of the enforcement will take place on the refinery end of things. If, however, a station is tested and their product exceeds the cap (there is an allowance for averaging gasoline produced, so a cap has been set to determine a point above which a gasoline cannot go and stay within the CBG averaging allowances); they and their producer/provider will have to show a papertrail on the product to determine if any of the "exempted" refineries's product explains for exceeding the cap.

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Thanks!
CAK

Forward Header

Subject: Re: POWERINE CARB SMALL REFINER

STATUS

Author: Jim E. Horner at TORMFG-PO1
Date: 2/3/96 2:44 PM

Mark,

We've got some sources pretty familiar with the goings on over at Powerine. Despite what the press has been

MOB 17683

reporting, our sources believe that Powerine's chances of restarting this year (or ever) are very low for the following reasons:

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1) The refinery process units and equipment is still under contract to Vas Kenyan whose intentions were to ship it to India. The group that bought the refinery land must first buy the equipment back from Kenyan before it gets on a boat. Kenyan may already have contracts in India that may not be broken or are more valuable than a sellback to the new Powerine group.

2) They estimate the start up expenses to be rather high - \$20MM; sounds steep but even at half that, it's a big number. There are serious doubts that financing can be acquired for the startup plus any low margin periods.

Even if they restart and they get a 7cent exemption, with current conventional refining margins so bad, the exemption may not be enough to make money for them on an operating basis. When we looked over their books last year, their operating expenses were about 5cpg of G&D higher than ours so they don't have alot of comfort zone if they have any operating problems in the restart.

Alot of big if's need to come through for Powerine to restart.

Bottom line: I'd bet Barry Switzer gets 'coach of the year' before Powerine restarts.

Jim

Reply Separator

Subject: POWERINE CARB SMALL REFINER

STATUS

Author: Mark J. Dizio at TORMFG-PO1

Date: 2/3/96 2:06 PM

JIM, ANY COMMENTS AS TO WHETHER POWERWINE WOULD EVEN STARTUP? REGARDS MARK

LUCILLE,
IF POWERINE RE-STARTS AND GETS THE SMALL REFINER EXEMPTION , I BELIEVE THE CARB MARKET PREMIUM WILL BE IMPACTED. COULD BE BY AS MUCH AS 2 -3 CPG.

AS BACKGROUND, WE HAVE BEEN PROJECTING THE CAL CARB POSITION TO BE BALANCED TO SHORT IN THE SUMMER AND LONG IN THE WINTER. THE POTENTIAL SUMMER SHORTFALL WOULD PROBABLY BE MET VIA GULF COAST ALKYLATE IMPORTS WHICH WE ESTIMATE WOULD EQUATE TO CARB PLUS A 10-12 CPG PREMIUM TO CONVENTIONAL. IN THE WINTER, WE WOULD EXPECT THE CARB PREMIUM WOULD BE NO LESS THAN THE REFINERS INCRMENTAL COST OF PRODUCTION , OR ABOUT 7-8 CPG. ON AVERAGE , WITHOUT ANY SUPPLY DISRUPTIONS THIS WOULD MEAN AN AVERAGE CARB PREMIUM OF ABOUT 8-10CPG VERSUS CONVENTIONAL.

MOB 17684

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and into San Diego.

Officials with the ARB tell OPIS that a decision on Powerine's 230 application should arrive sometime next week.

-- Scott Berhang

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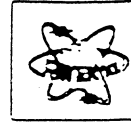
MOB 17687



POWERINE Oil Company

12354 Lakeland Road, P.O. Box 2108
Santa Fe Springs, California 90670-3857

(310) 944-3861
(310) 944-8111



TLX No. 4720404
AS Powerine
Facsimile (310) 944-3522

April 24, 1996

Mr. M. R. Diaz
General Manager, Supply & Distribution
Texaco Refining and Marketing, Inc.
10 Universal City Plaza, 6th Floor
Universal City, CA 91608

Dear Mr. Diaz:

Powerine Oil Company is attempting to restart its Santa Fe Springs, California, refinery which has been down since last July. We plan to resume a limited operation in May 1996, with the refinery back in full production by summer. When the refinery is in full production, Powerine plans to produce 20,000 barrels per day of CARB reformulated gasoline and 20,000 barrels per day of CARB and EPA diesel fuel and jet fuel.

In order to ease the current tight supply of gasoline, we propose accelerating our restart by offering your company a portion or all of Powerine's refinery production capacity under a processing agreement arrangement with terms and conditions that I believe you will find very favorable. Powerine is aware that the introduction of CARB reformulated gasoline combined with refinery operating problems in California has resulted in product demand not being met by the California refiners. This situation is forcing the industry to import product into California from refining centers outside the West Coast. A processing arrangement with your company would enable Powerine to resume full production much sooner, contribute to meeting CARB product demand and ensure that CARB reformulated gasoline standards are upheld. In addition, a processing arrangement with Powerine would provide your company with additional products to meet your marketing requirements.

If you are interested in discussing a processing arrangement with Powerine, please contact me as soon as possible. Powerine is prepared to meet with your company immediately to negotiate a processing arrangement with mutually agreeable terms for a portion or all of Powerine's refinery production. Powerine will enter into a processing agreement with the first company willing to proceed on acceptable terms.

I look forward to your timely response to our offer.

Very truly yours,

A. L. Gualtieri

A. L. Gualtieri
Chief Operating Officer

ALG/mjs

TRMI S&D			
APR 27 '96			
MRO	<input checked="" type="checkbox"/>	RJP	
RJG	<input checked="" type="checkbox"/>	WST	
JOM	<input checked="" type="checkbox"/>		
		DEC	
DUE DATE			
FOLLOW UP			
FILE <input checked="" type="checkbox"/>			

SPC 2 TX 000566



Texaco

DATE: March 7, 1996

TO: Messrs. J. F. Boles
 C. T. Walz
 P. W. Tomlinson
 A. S. Abay
 C. A. Flagg
 D. R. Hall
 R. C. Sheffield
 R. A. Pourciau

FROM: L. D. Hopkins

SUBJECT: FUTURE GASOLINE SPECIFICATIONS

There is a fuels issue of national significance which continues to gather momentum. The issue, being doggedly pursued by the American Automobile Manufacturers Association (AAMA), is one of: 1) altering ASTM gasoline specifications, and 2) finding a more 'efficient' process for making changes to fuel specifications.

From a long-range perspective, it appears that the AAMA are seeking benefits of tighter fuel standards that will come from: a) reducing the variability in gasoline that motorists purchase, and b) restricting key fuel parameters that are perceived to be costly or troublesome to vehicle control systems. Although perhaps presumptive, one could conclude that if the auto companies had their wish, gasoline would be defined as having a very narrow boiling range, be of constant density, be of constant energy content, and not contain any non-hydrocarbon compounds. In this manner, it is alleged, vehicle systems could be designed, built and operated at lowest cost and maximum emissions benefits, notwithstanding the fact that the gasoline suppliers would incur unbearable costs that the Auto's had avoided.

The natural instincts of fuel suppliers (API) to the above issue is a strong, unified defensive posture of taking action to see that the burden of 'fixing' a vehicle problem is not shifted to the oil industry. However, given the trend in recent years and the global drive for cleaner fuels, it is inevitable that the gasoline industry will continue to be regulated and/or pressured toward tighter gasoline specifications. Some suppliers may even voluntarily accede to the desires of the Auto's if they perceive a niche opportunity for competitive advantage.

TRM REFINING			
ACTION:			
X Handled	MAR 11 '96		
/ Read			
CTW	/	RSH	
ASA		RFM	
CAF		CAR	
DRH		VMP	
RCS		RAC	
DKG		JAA	
JCC		RHM	
		MAR	
TRACE DATE: _____			
Final Handling <input type="checkbox"/> File <input type="checkbox"/> Destroy <input type="checkbox"/>			

TEX 0018675

HIGHLY

The above situation was discussed at a Puget Sound Plant strategic planning meeting in January. From those discussions it became clear that this was not the most critical strategic challenge facing PSP. It was not even determined definitively to be a 'negative', given the business environment on the West Coast as discussed below.

As observed over the last few years and as projected well into the future, the most critical factor facing the refining industry on the West Coast is the surplus refining capacity, and the surplus gasoline production capacity. (The same situation exists for the entire U. S. refining industry.) Supply significantly exceeds demand year-round. This results in very poor refinery margins, and very poor refinery financial results. Significant events need to occur to assist in reducing supplies and/or increasing the demand for gasoline. One example of a significant event would be the elimination of mandates for oxygenate addition to gasoline. Given a choice, oxygenate usage would go down, and gasoline supplies would go down accordingly. (Much effort is being exerted to see that this happens in the Pacific Northwest.)

Within this context, the question was raised as to whether any parts of the AAMA fuel specification proposal (see 'Attachment 1' of the attached letter) would serve to benefit our most critical problem on the West Coast. For example, on the surface it would appear that a reduction in T90 maximum would serve to reduce gasoline supplies since it would drop the heavy end of gasoline down into the distillate pool (as one solution). But such a proposal raises many questions concerning the over-all impact on the refining markets, on Texaco and Star Enterprise, and on our competitive posture. In addition, the two examples used here would only incrementally serve to reduce supplies, whereas large adjustments are necessary. But they may be directionally beneficial.

The attached paper is a response to this issue raised during the PSP strategic planning session. It gives more in-depth treatment to the technical issues than it does to the business issues, but both require a lot more analysis, discussion and consensus-building before a conclusion can be reached for TRMI or Star Enterprise.

I would appreciate your review of this issue and advice as to whether you think we should put together a small work-group to assess the issue, identify opportunities, and develop a consensus on the proper position for Texaco/TRMI/Star Enterprise. From your responses, I will provide further direction. Please provide your reply by March 22, 1996.



LDH:

Copies for information: MDRedemer, GTJones

TEX 0018676

HIGHLY
CONFIDENTIAL

SPEC-1-TX 011238
CONFIDENTIAL



Texaco

DATE: February 14, 1996
TO: Mr. Keith Kraft
FROM: L. D. Hopkins
SUBJECT: PSP STRATEGY TEAM ASSIGNMENTS

Attached herewith is a report that addresses the issue to which I was assigned concerning the effect of gasoline specification changes on the supply of gasoline in the West Coast market.

I am assuming you will make copies of this report available to the PSP personnel as you see fit. Note that I have copied staff in UCP.

Please give me a call if you have any questions.

LDH:

Copies: RSHancock, RFMillar, BBoldt, MAColby

TEX 0018677

SPEC 1 TX 011239
CONFIDENTIAL

IMPACT OF FUTURE GASOLINE SPECIFICATION CHANGES

BACKGROUND

The American Automobile Manufacturers Association (AAMA) has for over a year been proclaiming to the oil industry that ASTM fuel specification changes were not keeping pace with the needs of the automobile systems as tighter and tighter vehicle emissions standards were being implemented. The oil industry, through API, argued for continuing the present ASTM process as the forum for establishing fuel standards that address the needs of all constituencies. After some unsuccessful attempts by the AAMA to get distillation and driveability index changes through the ASTM process, they began to criticize the slow, cumbersome ASTM process as being unresponsive to our mutual customers' needs. About mid-1995, the AAMA surfaced a draft set of gasoline specifications they referred to as 'national unleaded gasoline specifications'. That list of specifications has been slightly modified several times since then. The current list of specifications proposed are as shown in Attachment 1. A more detailed listing is shown as Attachment 2.

During this time of discussions, API developed an industry position on the procedures for setting gasoline standards. This policy position is shown as Attachment 3.

Because of a lack of interest by the oil companies to consider the AAMA proposal, the AAMA companies have recently threatened to publish the proposed specifications in owners' manuals and the name of marketers who have agreed to provide fuels meeting those specifications. They claim that some companies are already meeting or very close to meeting these specs. Ward's Automotive published a listing of branded gasoline qualities developed from AAMA's national gasoline survey program (Attachment 4). This may be a bold 'divide and conquer' strategy being deployed by the AAMA against the oil companies. If this is successful, it is unlikely that API could maintain its current consensus policy position on this issue.

Ford recently presented a paper calling for a new procedure for setting gasoline standards, referred to as the 'cowboy' approach. The way this approach would work is that the auto manufacturer would place a specification into immediate use while the document is routed through the formal standards-setting system (ASTM/CRC). They argue that this will greatly accelerate the standards-setting process and be more responsive to global demands. How to address the inevitable disagreements that will occur was not discussed.

More recently, the Auto/Oil Steering Committee, represented by five oil companies and the three domestic automakers, agreed to form an *ad hoc* team with members from the auto and oil companies to study the options for streamlining the ASTM standards-setting process and report back to the Steering Committee. Subsequently, the API Downstream Committee, representing all API companies, agreed to the proposed joint study, notwithstanding the strong API position on maintaining the existing process.

SPECIFICATIONS THAT MAY CHANGE

As shown in Attachment 1, the most significant specification changes being proposed are as follows:

Sulfur, wt % max	1000 ppm	—>	TBD
T50 max	250 F	—>	220 F
T90 max	374 F	—>	350 F
Driveability Index *	none	—>	1200 max

* Driveability Index (D.I.) = $1.5 \times T10 + 3 \times T50 + T90$: an adjustment for the presence of oxygenates is under development.

SULFUR: The information in Attachment 5 has been reviewed and still presents a valid scenario on the issue of sulfur in gasoline. *(Note: It has been suggested that the recent Memorandum of Agreement (MOA) negotiated between CARB and individual auto companies, which contains a requirement that the auto companies will introduce a national LEV no later than model year 2001, may change the timing of the scenario. This is not the case because, in my scenario, the national LEV was not the main driver for low sulfur gasoline since the Autos and EPA have both acknowledged that no special fuel will be required for the national LEV. The Autos state that the current limit is too high, and they will be looking at experimental results to justify a lower spec at a later date. Accounting for years for the regulatory and/or standard-setting process to occur and a four year lead time for refinery construction, 2003 - 2004 still seems reasonable to me.)*

T50 MAX: The Autos agree that the T50 max of 220 is technically feasible since CARB Phase 2 has a 200 - 210 F range. Further, they state that if a D.I. of 1200 max is met, then the T50 will likely be below 220 F. Also, it is likely that by lowering the T90 (following) that the T50 will automatically be reduced to some extent.

T90 MAX: Not many gasolines exceed the 350 F max currently, and T90 values are expected to be considerably less when the D.I. spec of 1200 max is met. In addition, heavier components in the gasoline are more difficult to combust and more readily form carbonaceous deposits. Thus, the lower T90 can help reduce the deposit forming tendencies of gasolines. In addition, the Auto/Oil research identified a T90 reduction as generally a

positive step in reducing tailpipe emissions of both hydrocarbons and Nox, and therefore ozone formation.

DRIVEABILITY INDEX: The Autos claim that a number of studies have determined that the number of customers dissatisfied with the driveability of their vehicle increases as the DI exceeds 1200. Current experiments are underway that the Autos believe will provide additional evidence to support their claim. A DI offset for oxygenates is considered to be very important to the Autos, but the specific adjustment has not been quantified. The Oil industry does not agree that the research evidence identifies 1200 as the maximum level for customer satisfaction. This issue will continue to be debated between our industries, but the Autos are not likely to relent.

IMPLICATIONS OF THE PROPOSED SPECIFICATION CHANGES TO TEXACO

The impact that the above specification changes would have on TRMI if implemented has to be evaluated within the context of the effect on the industry at-large. This is beyond the scope of this paper. However, it is appropriate and instructive to look at the effect these specification changes may have on the supply and/or demand for product on the U. S. West Coast. From that view, it may be possible to deduce some findings on the directional effect on PSP's financial health.

1. Any of the proposed spec changes would increase the cost of manufacturing gasoline. (If it didn't, refiners would already be doing it.)
2. A marginal increase in cost, if recovered, will have a marginal downward effect on demand (elasticity).
3. From a theoretical standpoint, an increase in refining cost will make marginal supply uneconomical, thereby incrementally reducing supply volumes.
4. With the possible exception of sulfur, all other proposed specification changes will result in a reduction in gasoline supply from the refineries, and results primarily from removing the heavier-ends through distillation. This is the single largest impact and the largest potential benefit to improving West Coast margins. *(Note: The effect on mogas production from PSP can best be estimated by the refinery. No attempt is made to do that here.)*
5. One result of 4. is that there will be additional Avjet/middle distillate produced, thereby adding to supplies of these products.

TEX 0018680

HIGHLY

6. The proposed changes will affect each refinery differently. To illustrate, Attachment 6 is included to show the DI scatter on samples obtained from the Southwest Research Institute's monthly retail surveys in 1994, both for Texaco gasolines and the entire industry gasolines. It is true that many of these samples could be from fungible product supplies, but the variability is still quite significant.
7. As for RVP, it is not apparent that summer RVP max levels will go much lower, if any. There is no motive at this time. Lowering winter-time RVP's could occur in certain metro areas, especially desert cities such as Phoenix, Las Vegas, etc. The auto companies seem to be concerned by lowering RVP much lower as it would begin to increase driveability problems, especially cold start problems.
8. On a separate but related matter, a reiteration of TRMI's fundamental policy on oxygenates is that we oppose mandated oxygenate useage where the environmental benefits are not commensurate with the cost. For example, the use of oxygenates to reduce ozone in non-attainment areas is not cost-effective; the use of oxygenates to reduce CO emissions in non-attainment areas is cost-effective. Further, there should be no biases favoring any specific oxygenate over another, but use should be based on performance criteria and free-market economics. This policy also serves to remove the oxygenate swell from the gasoline supply pool where it is not needed and not economical.

SUMMARY

Both the Texaco position and the API position currently is to fight the proposed specification changes because it will increase fuel cost and not deliver commensurate benefits to the consumers nor the environment. Thus it is not cost-effective.

Incremental improvements to refinery margins from reducing supplies or increasing demand can be achieved in a number of ways. One way would be to promote the more restrictive mandated specification changes to reduce supply of product; another would be to continue the poor financial performance by the industry until some weak performer dropped out; another would be for refiners to voluntarily reduce refinery production without incurring added costs or suffering attrition (admittedly unreasonably idealistic, but the best option).

Advocacy of a Texaco position on issues with industry groups or any regulatory agency should be consistent with those actions that will benefit TRMI vis-a-vis competition, or hurt TRMI less than competition.

TEX 0018681

If after careful consideration the PSP strategy team decides to recommend support for more restrictive fuel specifications such as those proposed by AAMA to help reduce the surplus supply of product on the West Coast. it should be brought to the attention of TRMI Headquarters Refining and EH&S Fuels staff for discussion within TRMI and the corporation.

TEX 0018682

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Figure IV.1: West Coast to Gulf Coast Conventional Gasoline Spot Prices,
June 1986 - March 2002

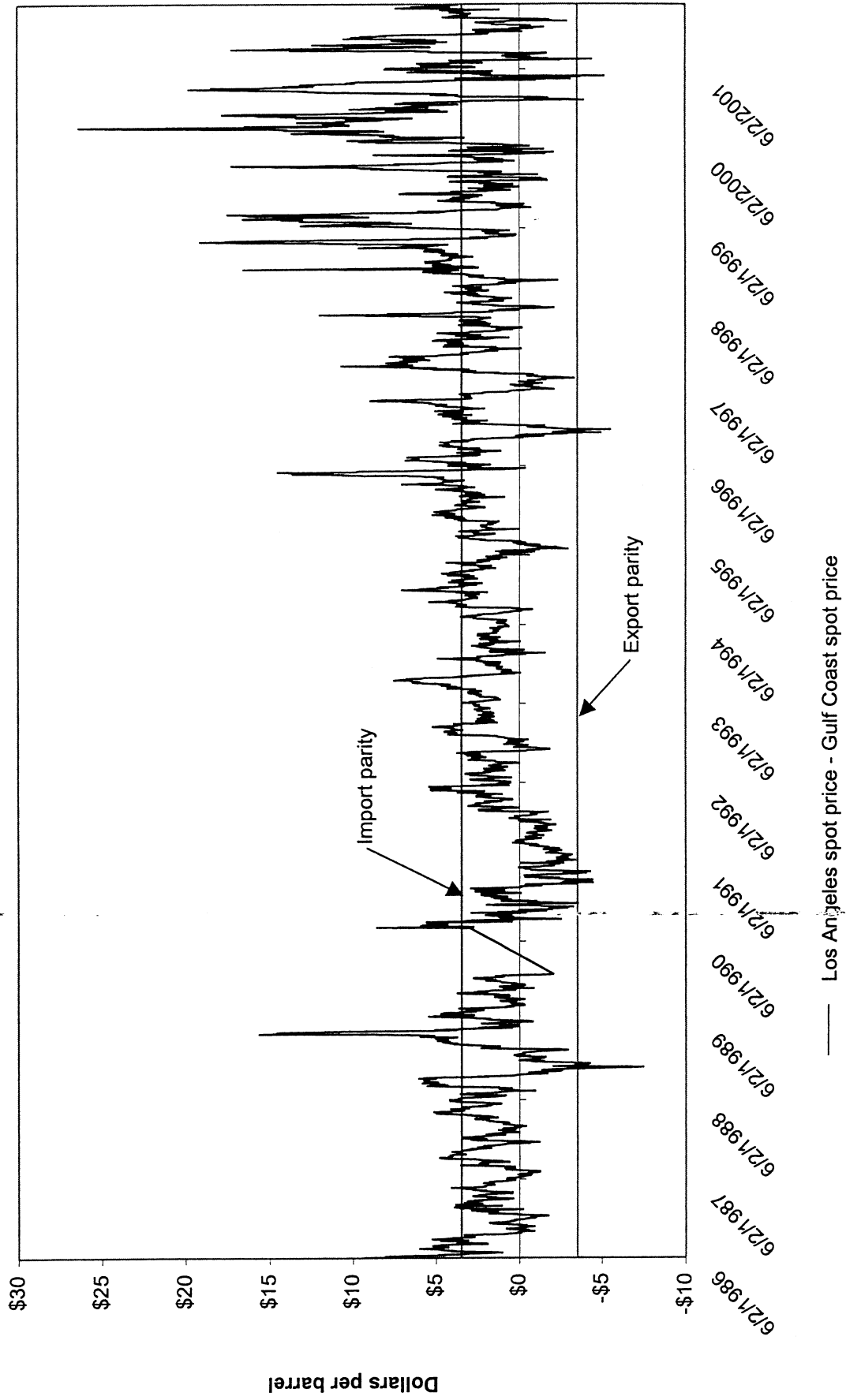
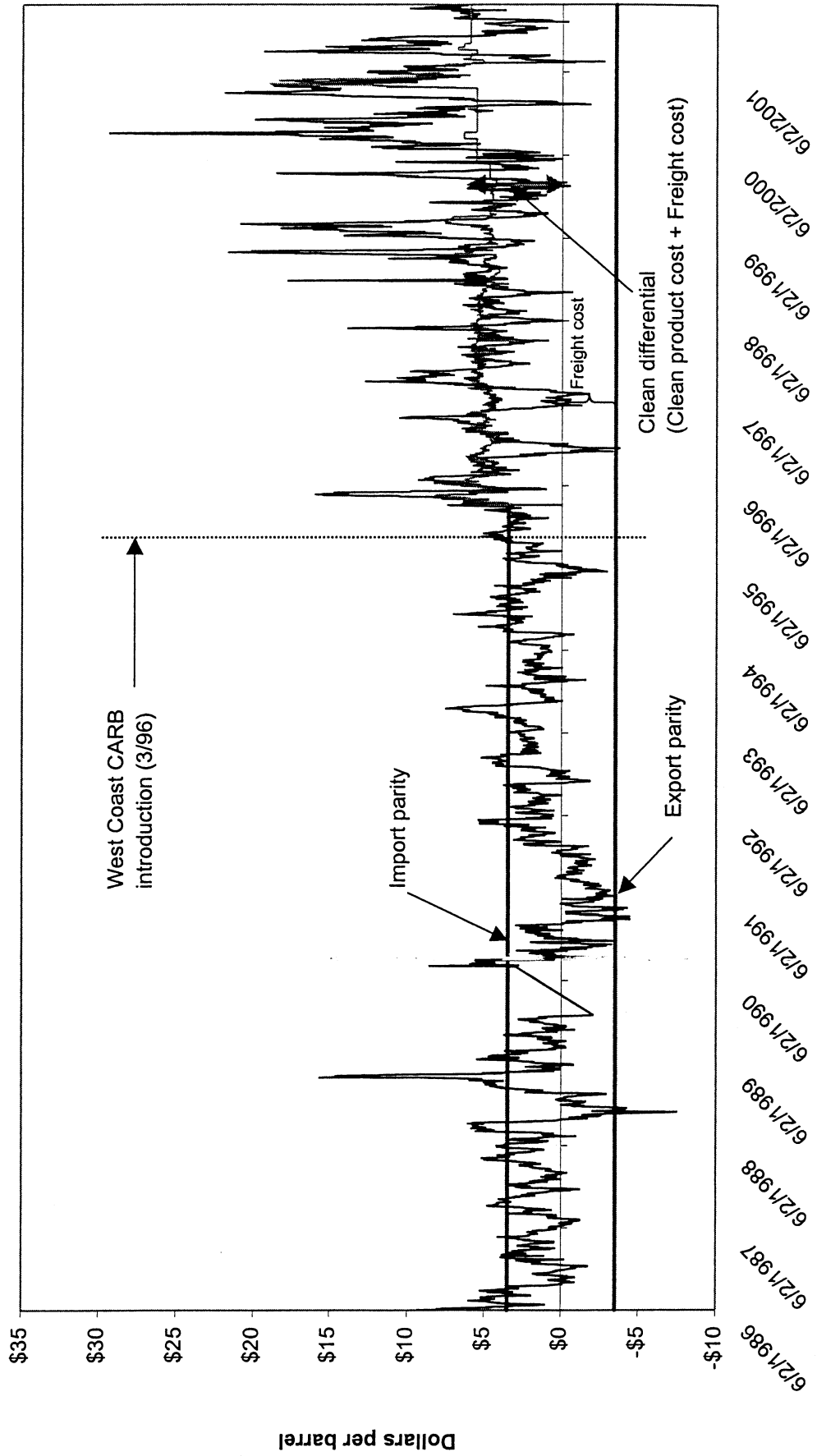
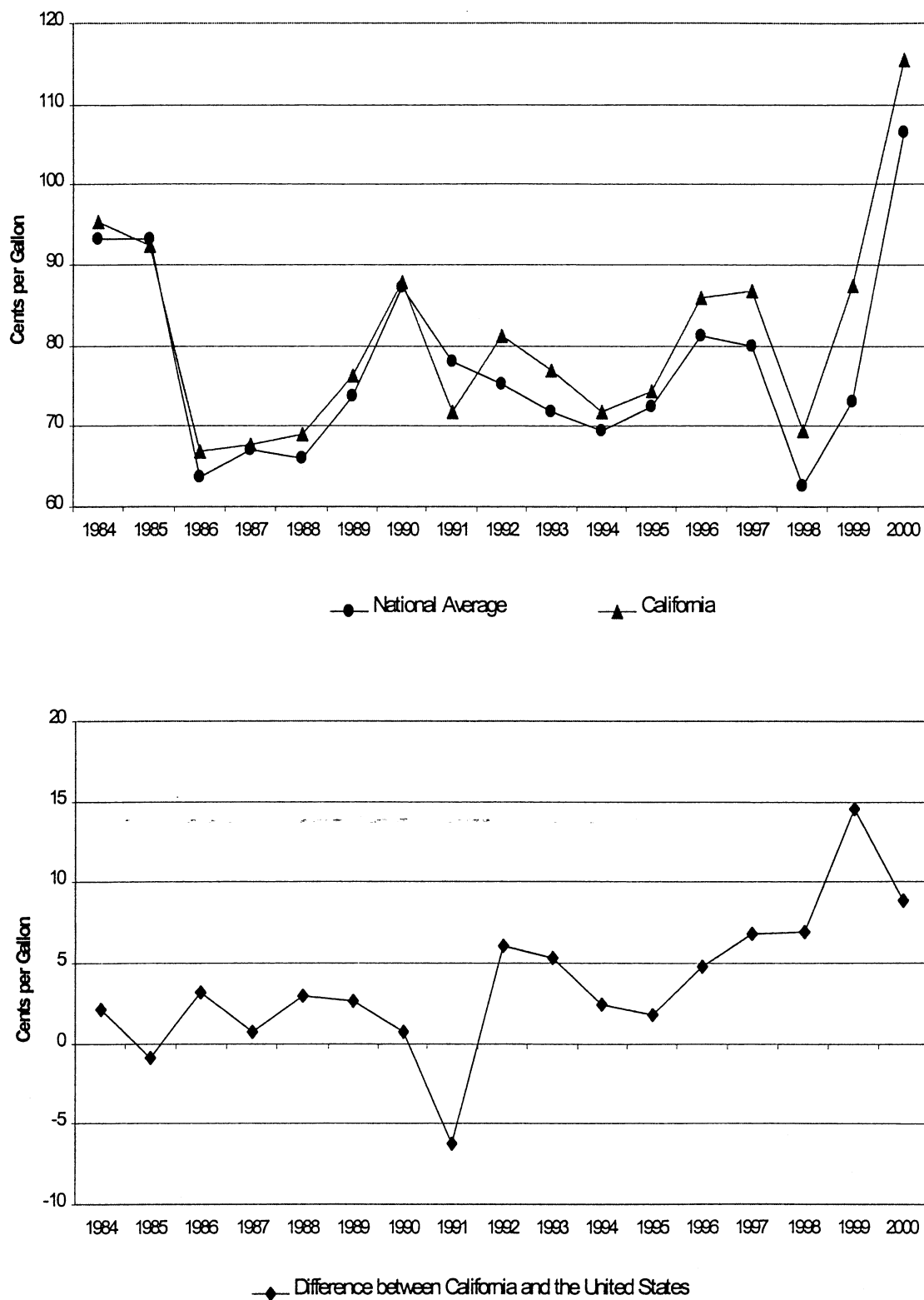


Figure IV.2: West Coast to Gulf Coast Saleable Gasoline Spot Prices,
June 1986 - March 2002

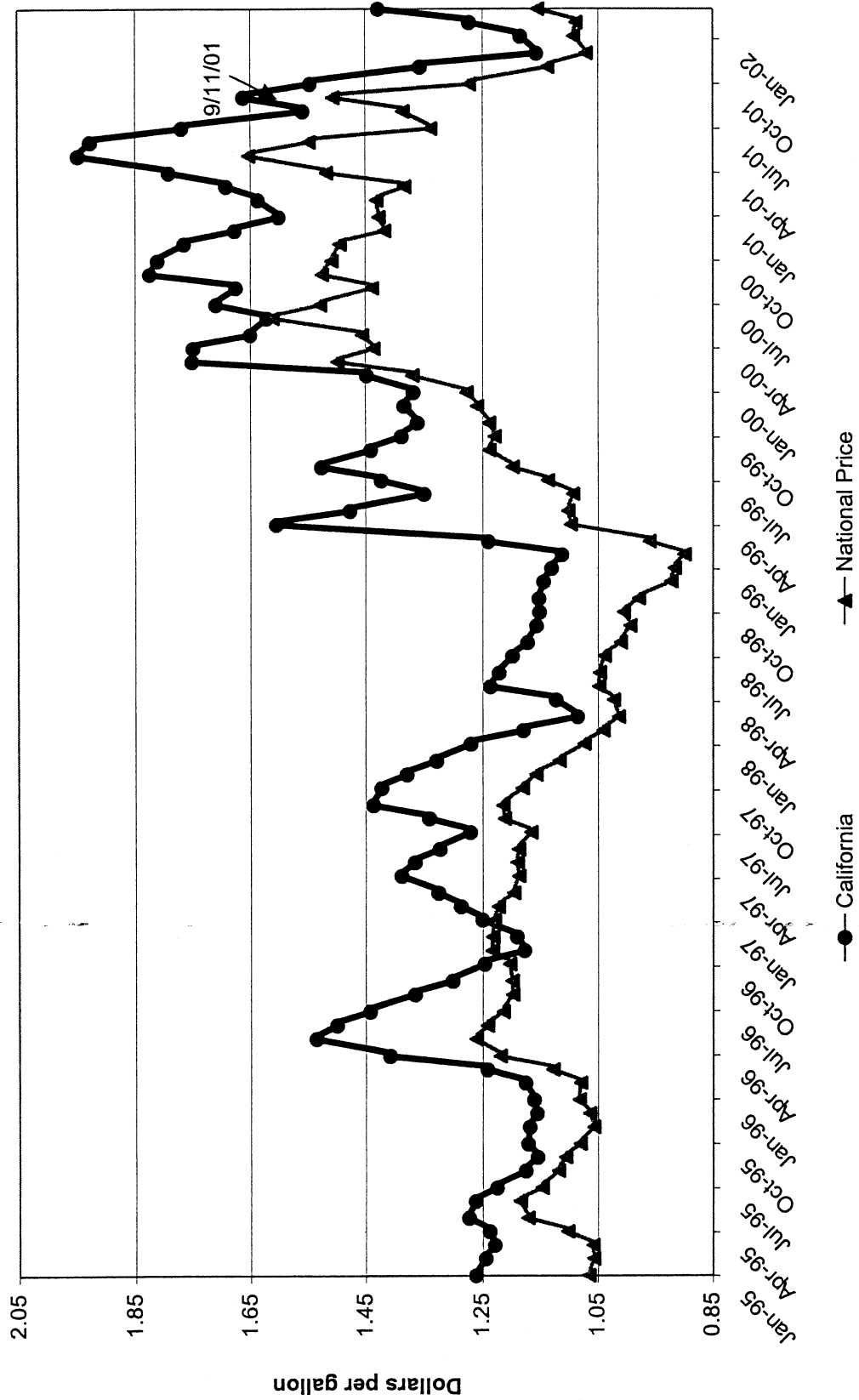


— Los Angeles saleable gasoline spot price - Gulf Coast spot price

Figure IV.3: Annual Average Retail Gasoline Prices for California and the United States, 1984-2000



**Figure IV.4: Retail Gasoline Prices -- California Compared to United States Average,
January 1995 - March 2002**



Source: DOE/EIA.

1 HIGHLY

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WEST COAST PRODUCT
PRICE FORMATION

ARC 000009263

HIGHLY

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THE OVERALL WEST COAST PRODUCT SUPPLY/DEMAND BALANCE
HAS MAJOR IMPLICATIONS FOR MARKETING MARGINS

Executive Summary

- The West Coast is unique – supply/demand balance oscillates between net short and net long
- When West Coast supply exceeds demand, pricing moves to export parity; when demand exceeds supply, pricing is driven to import parity
- Export parity in the spot market can compress margins all the way to the street
- The key is to strike the right balance both at the wholesale and retail level
 - Maintain spot balance versus the Gulf
 - Preserve competitive position on the street

ARCO PRODUCTS COMPANY

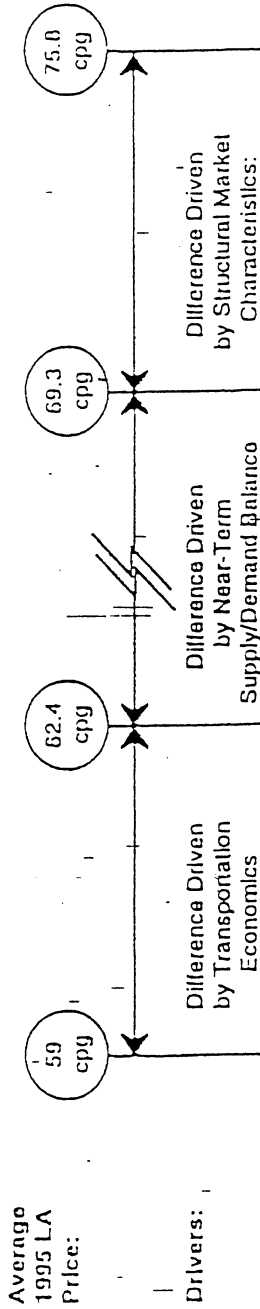
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ARC 000009264

**HIGHLY
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CHANGES IN THE SUPPLY/DEMAND BALANCE HAVE AN IMPACT ON SPOT TO STREET MARGINS IN THE WEST COAST

PRODUCT SPOT UNBRANDED RACK DEALER BUYING PRICE STEEL (EX-TAX)



- Majors/Independents
- Coops/Dealers
- Regional Income/Capla

Correlation Over Time:

Close

LA: 74%
SF: 87%

Highly Variable

LA: 44%
SF: 18%

Close

LA: 96%
SF: 92%

LA Correlation: 12%

January 1991-February 1996

RPSF-047-001-027

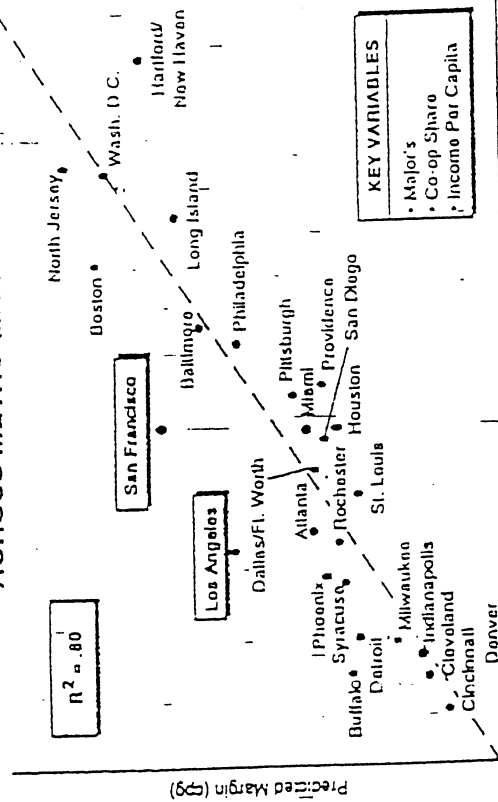
ARCO PRODUCTS COMPANY

22

ARC 000009265

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 IN OTHER MARKETS, THESE MARGINS ARE DRIVEN BY
 STRUCTURAL FUNDAMENTALS

**CORRELATION OF RACK-STREET MARGINS
 ACROSS METRO-MARKETS**

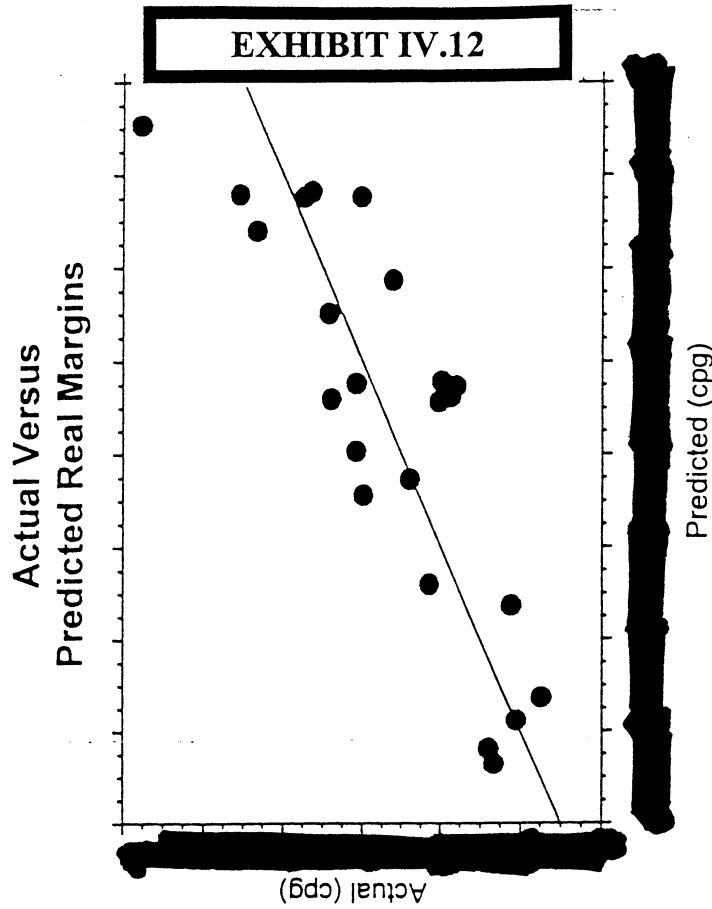
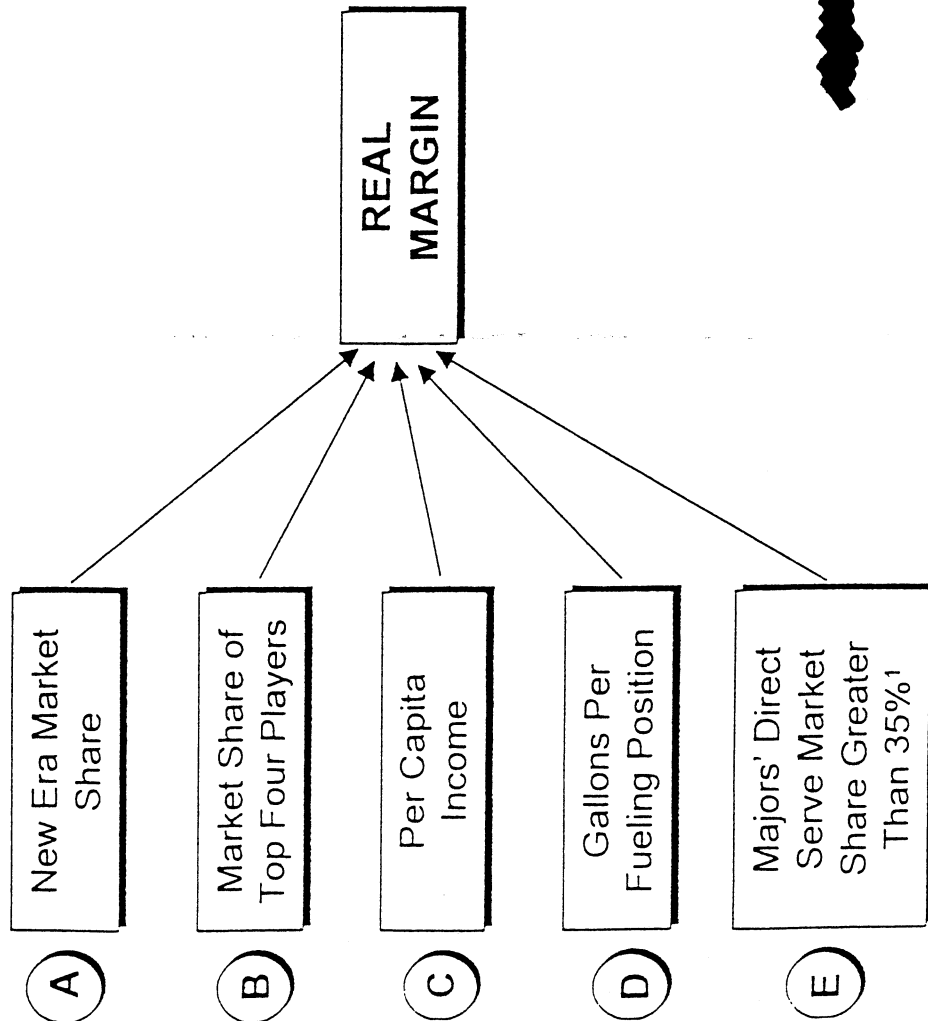


Source: OPIS Spot; Lundberg Retail; Whitney Leigh;
 MPSI; New Image; BA&H analysis
 RPSF-047-001-028

**THUS, IN MOST MARKETS, SPOT AND UNBRANDED RACK ACTIVITY
 DOES NOT IMPACT RETAIL MARGINS**

ARCO PRODUCTS COMPANY

Preliminary analysis suggests five main factors have significant influence on real margins in a market



1. Major Direct Serve = Major COCO, CODO, and DODO

File
POC
Speech TOO

TOSCO SLIDE

THANK YOU FOR THE FLATTERING INTRODUCTION. I'M PLEASED TO BE HERE TODAY REPRESENTING TOSCO CORPORATION.

I'VE TRIED TO STRUCTURE MY PRESENTATION SO IT'S RELEVANT TO WHAT THE PACIFIC OIL CONFERENCE IS ALL ABOUT AND WHAT YOU'RE INTERESTED IN. I'LL LIMIT MY REMARKS TO ABOUT 25 MINUTES THUS LEAVING PLENTY OF TIME FOR QUESTIONS.

MY DEFINITION OF RELEVANCE REVOLVES AROUND PROFIT AND I SUSPECT IT'S NOT FAR FROM ANY BUSINESS PERSONS MIND. WHILE MY REMARKS ARE WELL RESEARCHED, THEY SHOULD BE TAKEN AS THE OPINION OF TOSCO AND TOM O'MALLEY. OTHERS WILL UNDOUBTEDLY RELY ON DIFFERING INPUT AND MAY COME TO DIFFERENT CONCLUSIONS. I'M GOING TO TALK ABOUT CRUDE OIL PRODUCTION REFINING AND MARKETING, PARTICULARLY AS THEY RELATE TO PADD V AND TOSCO.

LET'S START OFF WITH A BRIEF DESCRIPTION OF TOSCO.

OIL REFINING SLIDE

TS0013421

WE'RE A REFINER WITH OVER 500 MBD OF CAPACITY
LOCATED ON BOTH THE EAST AND WEST COASTS OF
THE USA.

WHOLESALE MARKETING SLIDE

WE'RE A WHOLESALER OF PETROLEUM PRODUCTS
WITH EXTENSIVE TERMINAL OPERATIONS ON BOTH
COASTS.

RETAIL MARKETING SLIDE

WE'RE A RETAIL MARKETER ON THE WEST COAST
WITH THE EXCLUSIVE RIGHT TO USE THE BP BRAND IN
A 9-STATE REGION.

WE EXPECT TO HAVE SALES EXCEEDING \$6 BILLION IN
1994 WHICH WILL PUT US IN THE FORTUNE 100.

BASED ON OUR POSITION IN THE INDUSTRY, I BELIEVE
WE'RE QUALIFIED TO REVIEW ITS PROSPECTS OVER
THE BALANCE OF THE CENTURY.

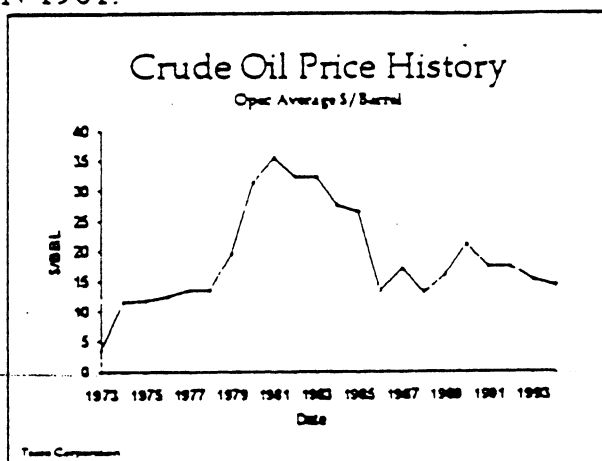
LET'S START WITH THE BASE RAW MATERIAL.

CRUDE OIL IS WHERE THE CYCLE STARTS. WE
ENTERED THE OPEC ERA IN ABOUT 1973 AND
ULTIMATELY PUSHED PRICES OVER \$36 / BBL. OPEC

TS0013422

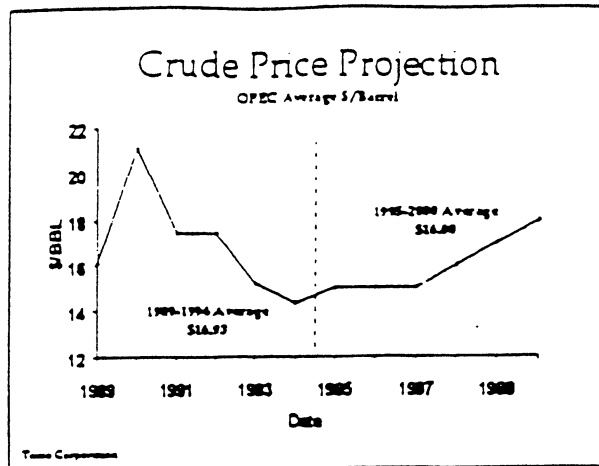
HAD A GREAT ASSIST FROM US GOVERNMENT REGULATIONS WHICH KEPT PRICES ARTIFICIALLY HIGH THROUGHOUT THE 2ND HALF OF THE 1970'S. RONALD REGAN TOOK OFFICE IN JAN OF 1981, REMOVED PRICE CONTROLS IN FEB OF 1981 AND SINCE THEN THE LAWS OF SUPPLY AND DEMAND AS OUTLINED BY ADAM SMITH OVER 200 YEARS AGO TOOK OVER.

SLIDE 1: SHOWS THE AVERAGE OPEC PRICE HISTORY SINCE 1973 AND THE START OF PRECIPITOUS DECLINE IN 1981.



THE LATE 80's AND EARLY 90's, WITH THE EXCEPTION OF THE GULF WAR, WERE A PERIOD OF RELATIVELY DECLINING CRUDE OIL PRICES.

TS0013423



THE SLIDE SHOWS THE LAST 6 YEARS PLUS OUR PROJECTION FOR THE 2ND HALF OF THE 90's. WE ONCE AGAIN USE OPEC AVERAGE PRICES. WE THINK THE YEARS 95 THRU 98 WILL BE STABLE AROUND TODAY'S LEVELS AND THEN WE PROJECT ESCALATION AT \$1 YEAR THRU THE END OF THE CENTURY.

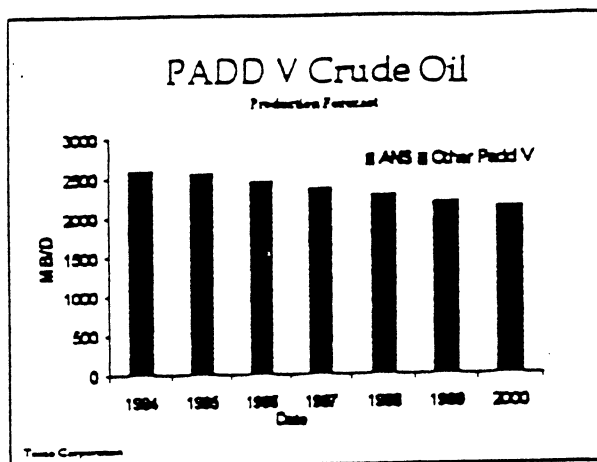
REGRETFULLY, I HAVE TO TELL YOU THERE IS NO SUCH THING AS AN ACCURATE LONG TERM CRUDE OIL PRICE PROJECTION. MANY THINGS COULD HAPPEN BUT SHORT OF A MAJOR WAR IN THE MIDDLE EAST, IT'S HARD TO SEE A LONGER TERM PRICE SPIKE.

CRUDE OIL PRICES WILL BE MAINLY DRIVEN BY THE SUPPLY DEMAND BALANCE. THE STRONG PACIFIC BASIN ECONOMIES WILL PROBABLY PUT A FLOOR UNDER THE PRICE SINCE WE EXPECT WORLDWIDE OIL PRODUCT CONSUMPTION GROWTH TO AVERAGE 1,500,000 BBLs PER DAY PER YEAR. THE WORLDWIDE SYSTEM IS RELATIVELY WELL BALANCED NOW BUT WE STILL HAVE AN OVERHANG IN IRAQ. WE THINK THIS IRAQI PRODUCTION WILL START TO COME TO

TS0013424

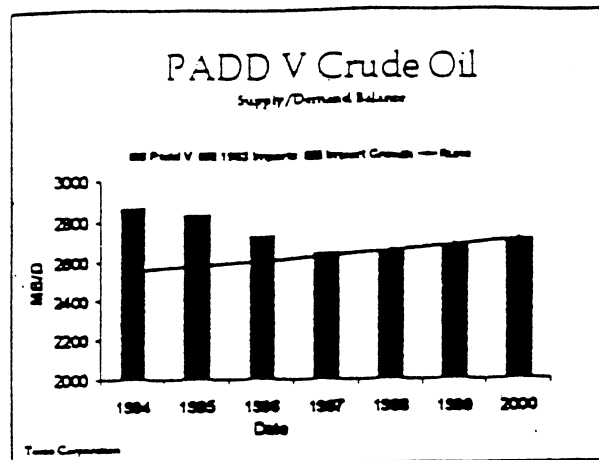
MARKET DURING THE 2ND HALF OF 1995 AND THAT IT WILL TAKE 2 TO 3 YEARS TO ABSORB IT.

LET'S FOCUS FOR A MINUTE ON PADD V, THE WESTERN U.S.:



THIS SLIDE SHOWS ANS PRODUCTION IN BLUE AND OTHER PADD V PRODUCTION IN RED. PADD V HAS BEEN SURPLUS SINCE NORTH SLOPE PRODUCTION CAME ON STREAM. THE NORTH SLOPE HAS DECLINED ABOUT 300 MBD SINCE IT REACHED ITS PEAK IN THE MID 80's AND IS EXPECTED TO CONTINUE TO SLOWLY DECLINE BY A TOTAL OF ABOUT 400 MBD IN THE 6 YEAR PERIOD THRU THE YEAR 2000. CALIFORNIA PRODUCTION WILL PROBABLY FALL OFF BY 50 MBD IN THE SAME TIME PERIOD. PADD V REFINERS, WILL BE IMPORTING MORE FOREIGN CRUDE IN THE FUTURE. HIGHER FREIGHT COSTS AND DIFFICULT PORT CONDITIONS, PARTICULARLY IN THE SAN FRANCISCO BAY AREA, WILL CAUSE PADD V CRUDE OIL COSTS TO ESCALATE EVEN MORE THAN THE WORLD MARKET.

TS0013425



THIS SLIDE SHOWS THE PADD V PRODUCTION DECLINE IN BLUE, PRESENT IMPORTS AS A CONSTANT IN RED AND IMPORT GROWTH STARTING IN 2 OR 3 YEARS IN YELLOW. IF I WAS TO GUESS, HIGHER CRUDE IMPORTS AND EXPENSIVE TRANSPORTATION WILL ADD ANOTHER 2 CENTS / GAL TO THE COST OF PADD V PRODUCTS.

SUMMARIZING THE VIEW TOSCO HAS ON THE CRUDE OIL OUTLOOK IN THE WORLD AND PADD V TELLS US 2 THINGS:

1. CRUDE PRODUCERS WILL HAVE TO LIVE WITH LOW PRICES FOR SEVERAL MORE YEARS.
2. CRUDE OIL COSTS SHOULD NOT CAUSE SIGNIFICANT INFLATION IN THE VALUE OF OIL PRODUCTS.

TOSCO CURRENTLY HAS NO CRUDE OIL PRODUCTION AND PRESENTLY HAS NO PLANS TO ENTER THIS BUSINESS.

TS0013426

LET'S NOW SWITCH OVER TO THE NEXT STEP IN THE CYCLE REFINING. TOSCO HAS A GREAT INTEREST IN THIS SINCE WE OWN 500, BPD OF REFINING CAPACITY IN THE UNITED STATES. I'M GOING TO CONCENTRATE TODAY ON CALIFORNIA WHICH WILL IN ESSENCE CHANGE FROM A COMMODITY REFINING MARKET TO A SPECIALITY CHEMICAL BUSINESS DETACHED TO A GREAT DEGREE FROM REFINING IN THE REST OF THE US, AND TO AN EVEN GREATER DEGREE, FROM THE REST OF THE WORLD.

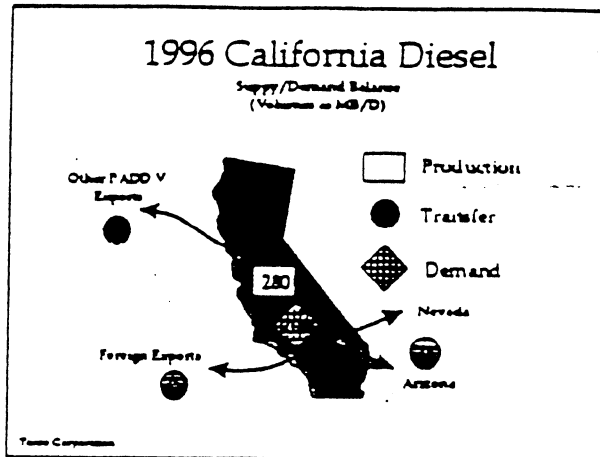
WE ARE EXPERIENCING AND WILL CONTINUE TO SEE INFLATION IN THE COST OF OIL PRODUCTS AS A RESULT OF NEW GOVERNMENT REGULATION.

CALIFORNIA, BY FAR THE LARGEST CONSUMER OF PRODUCTS IN PADD V, HAS PUT IN PLACE SPECIFICATIONS FOR DIESEL AND GASOLINE THAT ARE DIFFERENT THAN ANYWHERE ELSE IN THE WORLD. OTHER STATES, AND EVENTUALLY COUNTRIES, MAY FOLLOW, BUT I DOUBT IF ANYONE WILL IMPLEMENT CALIFORNIA SPECS MUCH BEFORE THE YEAR 2000.

THE CALIFORNIA AIR RESOURCES BOARD, BETTER KNOWN AS CARB ESTABLISHED SPECIFICATIONS FOR DIESEL WHICH RESULTED IN A PRICE INCREASE OF 5 TO 9 CENTS/GAL SINCE INCEPTION IN OCT OF 1993. I'M, OF COURSE, OMITTING THE BRIEF START UP PERIOD WHEN WE SAW VERY HIGH PREMIUMS OR 30 TO 40 CENTS / GAL.

CARB DIESEL NOW TRADES AT A PREMIUM OVER REGULAR GRADE IN THE 5 TO 8 CENTS RANGE. I THINK

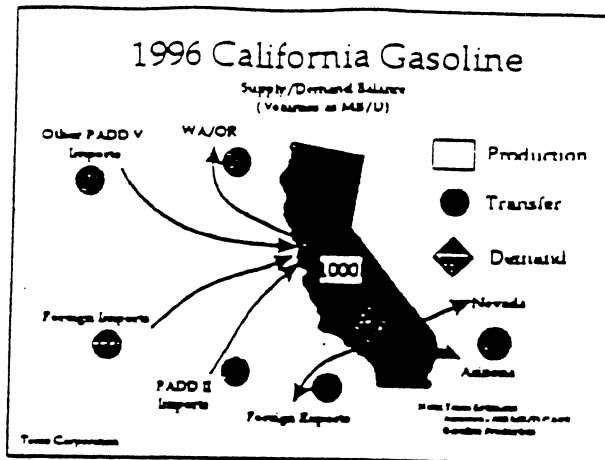
THIS PREMIUM WILL STAY IN PLACE AND COULD GROW SUBSTANTIALLY IF WE EXPERIENCE A MAJOR LONGER TERM UPSET AT ONE OF CALIFORNIA'S LARGE DIESEL REFINERIES. TOSCO IS CALIFORNIA'S 3RD LARGEST DIESEL PRODUCER. WE MAKE UP TO 55 MBD OF THIS TRANSPORTATION FUEL AND SUPPLY ABOUT 25% OF CARB DEMAND.



THIS SLIDE SHOWS CALIFORNIA DIESEL BALANCES. ACCURATE STATISTICS ARE DIFFICULT TO OBTAIN. WE BELIEVE ~~CARB~~ CONSUMPTION IS ABOUT 190 MBD AND ~~THAT~~ PRODUCTION IS VERY CLOSE TO THAT NUMBER. THIS IS AN INSTANCE WHERE THE INDUSTRY COULDN'T ECONOMICALLY CONVERT 100% OF THEIR PRODUCTION TO THE NEW SPECIFICATION AND HAD TO EXPORT. THIS RESULTED IN A FIRM CARB DIESEL PRICE. WE MAY SEE THE SAME SITUATION IN GASOLINE.

CARB PHASE II GASOLINE IS DUE TO ARRIVE IN APRIL OF 1996, I.E. ABOUT 1-1/2 YEARS FROM NOW.

TS0013428



THIS SLIDE SHOWS WHAT WE THINK GASOLINE FLOWS IN CALIFORNIA WILL BE STARTING IN MARCH OF 1996. REMEMBER THESE ARE TOSCO ESTIMATES AND OTHERS MAY HAVE A DIFFERING VIEW.

AT THE RIGHT PRICE THERE WILL BE ENOUGH CARB GASOLINE. WHY PREFACE THE SUPPLY ISSUE WITH PRICE? WELL, WE BELIEVE THE CALIFORNIA REFINING INDUSTRY WILL NOT MAKE SUFFICIENT CARB GASOLINE TO FULLY SUPPLY CALIFORNIA CONSUMPTION IN 1996. OBVIOUSLY ANY PROJECTION NEEDS A DEMAND FORECAST. OUR CALIFORNIA DEMAND ESTIMATE OF 945,000 BBL'S PER DAY GASOLINE CONSUMPTION IS BASED ON A 1.5% PER ANNUM AVERAGE DEMAND INCREASE FROM 1993 TO 1996. WE ALSO INCLUDE THE IMPACT FROM LOWER MILEAGE FROM CARB PHASE II GASOLINE. RESEARCH RESULTS PUBLISHED BY THE SOCIETY OF AUTOMOTIVE ENGINEERS INDICATES MILEAGE DEGRADATION OF ABOUT 4% WHEN COMPARED TO CONVENTIONAL NON OXY GASOLINE TODAY. WE ESTIMATE THERE WILL BE

A SHORT FALL OF OVER ¹⁰⁰~~140~~ MBD WHICH WILL HAVE TO BE IMPORTED.

IMPORTS WILL COME EITHER FROM OTHER U.S. REFINERIES OR FROM OFFSHORE. ALMOST ANY COMPLEX REFINERY CAN MAKE SOME QUANTITY OF CARB GASOLINE. THE COSTS, HOWEVER, OF SEGREGATING HIGH QUALITY COMPONENTS, THUS IMPACTING THE QUALITY OF THE BALANCE OF THE REFINERS GASOLINE POOL ARE SUCH THAT NON CALIFORNIANS WILL NEED A REAL FINANCIAL INCENTIVE TO PRODUCE CARB GASOLINE. HOW MUCH? I WOULD GUESS MINIMUM 4 CENTS / GAL FOR THE MOST COMPETITIVE GROUP. THIS NUMBER ONLY DEALS WITH THE MANUFACTURING COST. THERE IS ALSO THE QUESTION OF FREIGHT TO CALIFORNIA. WE THINK THE MINIMUM FREIGHT COST IS 2 CENTS / GAL WHICH WOULD BE TODAY'S LOWEST COST FROM THE NORTHWEST. MORE DISTANT IMPORT SOURCES WOULD CARRY A FREIGHT COST OF 4 TO 6 CENTS / GAL. THE COMBINATION OF QUALITY AND FREIGHT TOTALS MINIMUM 6 CENTS / GAL. THIS EXCLUDES OXYGENATES FOR THE GASOLINE. CARB GASOLINE MUST BE OXYGENATED YEAR ROUND AND MEET AN RVP LIMIT OF 7.2 IN THE SUMMER. WE ESTIMATE THAT THE COMBINATION OF OXYGENATE AND LOWER RVP WILL ADD ANOTHER 4 CENTS / GAL TO THE COST OF CALIFORNIA GASOLINE. THIS EXTRA 4 CENTS WILL BE A YEAR ROUND FACTOR IN SOUTHERN CALIFORNIA STARTING IN 1995 WHEN FEDERAL REFORMULATED GASOLINE KICKS IN. IT'S A COST THAT OTHER AREAS OF THE COUNTRY WILL HAVE TO PAY IF THEY ARE DESIGNATED NON ATTAINMENT AREAS. THIS

PREMIUM IS BASED ON TODAY'S OXYGENATE PRICES
IT WILL SHRINK OR EXPAND DEPENDING ON WHAT
HAPPENS TO OXYGENATE PRICES.

LET'S EXAMINE FOR A MOMENT THE REASON WHY
TOSCO THINKS THERE WILL BE A NEED TO IMPORT
GASOLINE INTO CALIFORNIA. THE SITUATION IS
SIMILAR TO WHAT WE HAVE SEEN ON CARB DIESEL.
THE COST OF MANUFACTURING CARB GASOLINE GOES
UP AS THE % OF CARB GASOLINE TO A REFINERIES
TOTAL GASOLINE PRODUCTION INCREASES. THUS THE
FIRST 50% OF CARB PHASE II COSTS X, WHILE EACH
ADDITIONAL 10% IS X PLUS UNTIL YOU GET TO THE
LAST 10% WHICH MAYBE 2 X. THE X WILL DIFFER FOR
EACH REFINERY BUT I DOUBT IF ANYONE HAS AN X
MUCH BELOW 4 CENTS/GAL. WE THINK THIS RISING
COST FACTOR WILL RESULT IN THE INDUSTRY
CONVERTING ONLY 80% OF ITS CURRENT GASOLINE TO
CARB QUALITY WITH THE BALANCE OF 20% MEETING
CURRENT SPECS. THE 80% FACTOR LEADS US TO THE
DATA SHOWN ON THIS SLIDE, I.E. IMPORTS OF 145,000
MBD AND EXPORTS OF 200 MBD. THERE WILL BE SOME
SEASONAL SWING WITH HIGHER CARB PRODUCTION IN
THE WINTER AND LOWER IN THE SUMMER. THE PRIME
FACTOR FOR THIS SWING IS HIGHER RVP IN WINTER.

Possible Scenario			
California S/D Balance 1994 (Volume in MB/D)			
<u>Production</u>		<u>1000</u>	
<u>Imports</u>		<u>Exports</u>	
PADD V	25	PADD V	30
PADD III	60	NV and AZ	140
Foreign	60	Foreign	30
Total Imports	145	Total Exports	200
<u>Demand</u>		<u>945</u>	

THIS SLIDE SHOWS CALIFORNIA PRODUCTION AND CONSUMPTION IN TABULAR FORM.

MARKET FORCES WILL SET THE PRICE FOR CARB GASOLINE AND THESE FORCES WILL INVOLVE AN INTERESTING MIX OF CAPITAL INVESTMENT ECONOMICS AND IMPORT INCENTIVE. FROM OUR PERSPECTIVE, EXCLUDING OXYGENATE COSTS, WHICH HAVE SEPARATE MARKET DYNAMICS, THE TWO SEEM TO BE COMING TOGETHER AROUND THE 6 CENTS / GAL MARK. IF A REFINER CAN'T MAKE A REASONABLE PROFIT AT THAT NUMBER, WE FEEL THE INVESTMENT MAY NOT WORK OUT WELL.

OUR PROJECTIONS ON INCREASED PRICES FOR THE NEW CALIFORNIA GASOLINE OF 6 CENTS FOR MANUFACTURING AND 4 CENTS FOR OXYGENATE ARE REASONABLY IN LINE WITH CARBS PROJECTIONS BUT BELOW LEVELS INDICATED BY OTHERS IN THE INDUSTRY. THERE IS AN IMPORTANT QUALIFICATION, THIS IS A VERY FINELY BALANCED SYSTEM.

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IF ANY OF THE LARGE REFINERS IN CALIFORNIA EXPERIENCES AN UNPLANNED SHUTDOWN, THE PREMIUM OF 6 CENTS COULD EASILY BE TWO OR THREE TIMES THAT NUMBER FOR SOME PERIOD OF TIME. ALSO, THE 1ST MONTHS OF OPERATION WILL PROBABLY SEE LARGER PREMIUMS AND SUMMER DUE TO LOWER PRODUCTION AND HIGHER CONSUMPTION WILL BE TIGHTER THAN THE WINTER.

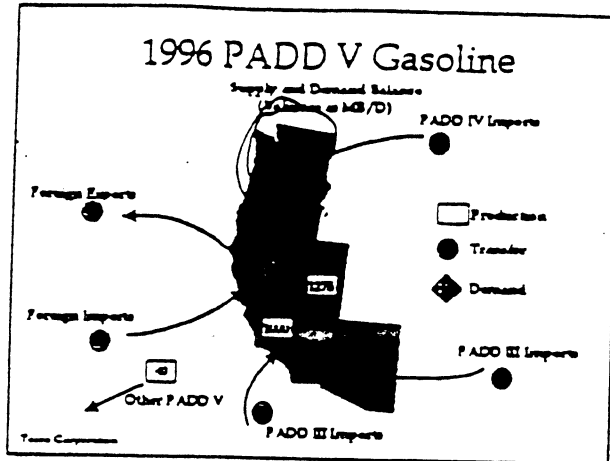
WHAT WILL TOSCO DO?

TOSCO WILL MAKE LESS THAN 100% OF OUR CURRENT PRODUCTION INTO CARB PHASE II GASOLINE. WE EXPECT TO START OFF WITH SOMEWHAT MORE THAN 50% OR OVER 50,000 MBD ON AN ANNUAL BASIS. WE'RE INVESTING ABOUT \$100,000,000 TO REACH THIS PERCENTAGE. WE'RE CONFIDENT, BASED ON OUR SUPPLY ANALYSIS, AND THE PREMIUMS WE MENTIONED EARLIER, THAT THIS WILL PROVE TO BE A REASONABLE INVESTMENT FOR TOSCO.

ADDITIONALLY, YOU MAY HAVE SEEN OUR PRESS RELEASE YESTERDAY WHERE WE INDICATED WE'VE MADE ARRANGEMENTS WITH CHEVRON TO SWAP, FOR MINIMUM 7 YEARS, 30 MBD OF REGULAR GASOLINE INTO CARB PHASE II. THUS TOSCO WILL HAVE ABOUT 80% OF ITS CURRENT GASOLINE PRODUCTION AVAILABLE IN APRIL OF 1996 AS CARB PHASE II. IF THERE IS AN ECONOMIC INCENTIVE THAT GIVES US A BETTER PROFIT THAN OUR SWAP, WE MAY MAKE FURTHER INVESTMENTS TO INCREASE OUR PROCESSING CAPABILITY BUT FOR NOW WE'RE TAKING A WAIT AND SEE CONSERVATIVE APPROACH.

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LET'S NOW TALK ABOUT THE BALANCE OF PADD V REFINING CAPACITY, WHICH IS PRIMARILY WASHINGTON STATE.



THIS SLIDE SHOWS GASOLINE FLOWS THRUOUT PADD V.

TOSCO's, FERNDAL, WASHINGTON, REFINERY, HAS NO PLANS AT PRESENT TO MAKE CARB GASOLINE. WE SELL ALL THE GASOLINE MADE AT FERNDAL IN WASHINGTON AND OREGON THROUGH OUR RETAIL SYSTEM. WE CURRENTLY SELL AN ADDITIONAL VOLUME AT WHOLESALE THAT IS USUALLY EXCHANGED TO THE NORTHWEST. WE INTEND TO CONTINUE TO SUPPLY THESE OUTLETS WITH NON CARB GASOLINE, PROBABLY NOT VIA EXCHANGE BUT THROUGH ACTUAL SHIPMENT TO THE NORTHWEST. WE DON'T THINK THE MARKET CAN RELY ON THE NORTHWEST FOR SIGNIFICANT VOLUMES OF CARB GASOLINE. WE DON'T KNOW OF ANY NON CALIFORNIA PADD V REFINER WHO HAS ANNOUNCED PLANS TO MAKE CARB PHASE II GASOLINE. IN SPITE OF NOT HAVING SPECIFIC INFORMATION, WE HAVE SHOWN 25

MBD OF CARB PHASE II GASOLINE FLOWING FROM THE NORTHWEST TO CALIFORNIA ON OUR ANALYSIS.

NOW THAT WE'VE DISCUSSED CALIFORNIA CARB PHASE II, LET'S SPEND A MINUTE ON REFINING IN GENERAL. IF, AS WE EXPECT, PRODUCT CONSUMPTION ON A WORLD WIDE BASIS GROWS FASTER THAN THE ADDITION OF NEW REFINING CAPACITY, REFINING WILL BECOME A BETTER BUSINESS. ADDING A LITTLE EXTRA DIMENSION IS THE PROBABILITY THAT SMALL, INEFFICIENT REFINERS WILL CONTINUE TO CLOSE DOWN.

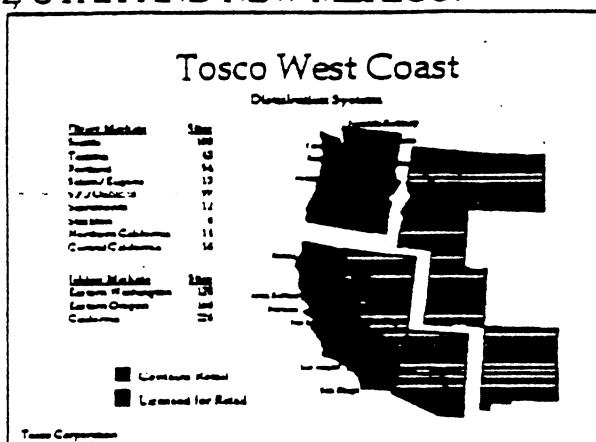
SUMMARIZING MY REMARKS ON REFINING:

1. COSTS FOR CARB OXYGENATED GASOLINE WILL ESCALATE BY A TOTAL OF MINIMUM 10 CENTS / GAL.
2. REFINERS MAY SEE BETTER PROFITS IN THE 2ND HALF OF THE 90's. BUT WE WILL CONTINUE TO SEE VERY COMPETITIVE MARKETS.
3. WE CONTINUE TO BELIEVE SMALL REFINERS, I.E. 50 MBD OR LESS, CAN'T SURVIVE IN THE LONG-TERM.

LET'S MOVE ON TO TOSCO'S CURRENT GROWTH AREA - RETAIL. WE HAD NO RETAIL OUTLETS UNTIL 9 MONTHS AGO, WHEN WE TOOK OVER BP's SYSTEM IN THE NORTHWEST.

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I THINK ALL OF YOU KNOW WE PROMPTLY EXPANDED BY ACQUIRING BP'S CALIFORNIA SYSTEM ON AUG 1, 1994. WE CONTRACTED AT THE SAME TIME FOR THE EXCLUSIVE RIGHT TO MARKET UNDER THE BP BRAND FOR THE NEXT 12 YEARS IN CALIFORNIA, WASHINGTON, OREGON, ARIZONA, NEVADA, IDAHO, MONTANA, UTAH AND NEW MEXICO.



*Tosco and
the wholesale
marketing
system*

THIS SLIDE SHOWS TOSCO'S BP BRAND SYSTEM AS IT EXISTS TODAY.

WE ARE CURRENTLY SELLING ABOUT 2.6 MILLION GALLONS OF GASOLINE PER DAY AT RETAIL UNDER THE BP BRAND. THIS REPRESENTS OVER 43% OF TOSCO'S PADD V PRODUCTION. TOSCO HOPES TO ADD TO ITS BP BRAND SYSTEM OVER THE NEXT FEW YEARS. WE'RE INTERESTED IN JOBBER AND DEALER EXPANSION AND WE'RE ALSO IN THE MARKET TO BUY OIL COMPANY, JOBBER OR DEALER SITES. WE WOULD ADDITIONALLY CONSIDER LEASES OF SUCH FACILITIES ON A VERY LONG TERM BASIS. TOSCO WANTS TO EXPAND IN RETAILING SO OBVIOUSLY WE FEEL A PROFIT CAN BE MADE. WE DON'T, HOWEVER, BELIEVE

WE'RE ENTERING A PERIOD OF FAT MARGINS. WE BELIEVE THE TREND OF THE LAST 20 YEARS WILL CONTINUE, I.E. LARGER AND FEWER STATIONS WILL SERVICE A SLOW INCREASE IN VOLUME. RETAILING IS A MAJOR LEAGUE BUSINESS WHERE INDIVIDUAL UNITS THAT CAN SURVIVE IN THE LONG TERM HAVE A VALUE OVER \$1,000,000 WITH ANNUAL FUEL AND CONVENIENCE SALES OVER \$5,000,000. THIS IS SIMPLY NOT A MOM AND POP BUSINESS ANYMORE!

AS WITH EVERYTHING ELSE, THERE WILL BE A DIFFERENCE BETWEEN CALIFORNIA AND THE OTHER STATES IN PADD V. THE PRICE INCREASE IN CALIFORNIA IN APRIL OF 1996 COULD CAUSE EROSION OF MARGINS AT RETAIL FOR SOME PERIOD OF TIME. CARB GASOLINE WILL, ON THE OTHER HAND, INCREASE EVERYONE'S VOLUMES BY 3% OR 4% DUE TO ITS LOW MILEAGE CHARACTERISTICS. THERE IS ALSO A REAL POTENTIAL FOR SHORT TERM INTERRUPTION OF LARGE VOLUMES OF CARB PHASE II GASOLINE SUPPLY. IF ONE OF THE BIG CAT CRACKERS OR OTHER KEY UNITS IN CALIFORNIA GOES DOWN UNEXPECTEDLY, WE COULD SEE A SPOT MARKET PRICE SPIKES OF LARGE DIMENSION AND SERIOUS SHORT TERM SUPPLY DIFFICULTY. THIS SHOULD GIVE ANYONE WHO RELIES ON THE SPOT MARKET AN INCENTIVE TO TIE UP SUPPLY WITH A LARGE REFINER.

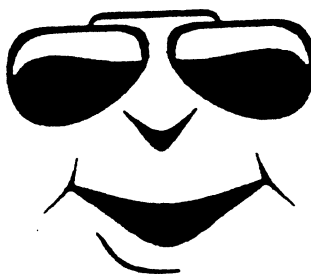
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Current Gasoline Production		
(Toms Estimate)		
<u>Company</u>	<u>PADD V</u>	<u>California</u>
ARCO	215	135
Chevron	210	195
Tosco	140	100
Texaco	135	70
Shell	130	80
Union	125	125
Exxon	105	105
Mobil	95	95
Ultramar	50	50

Toms Corporation

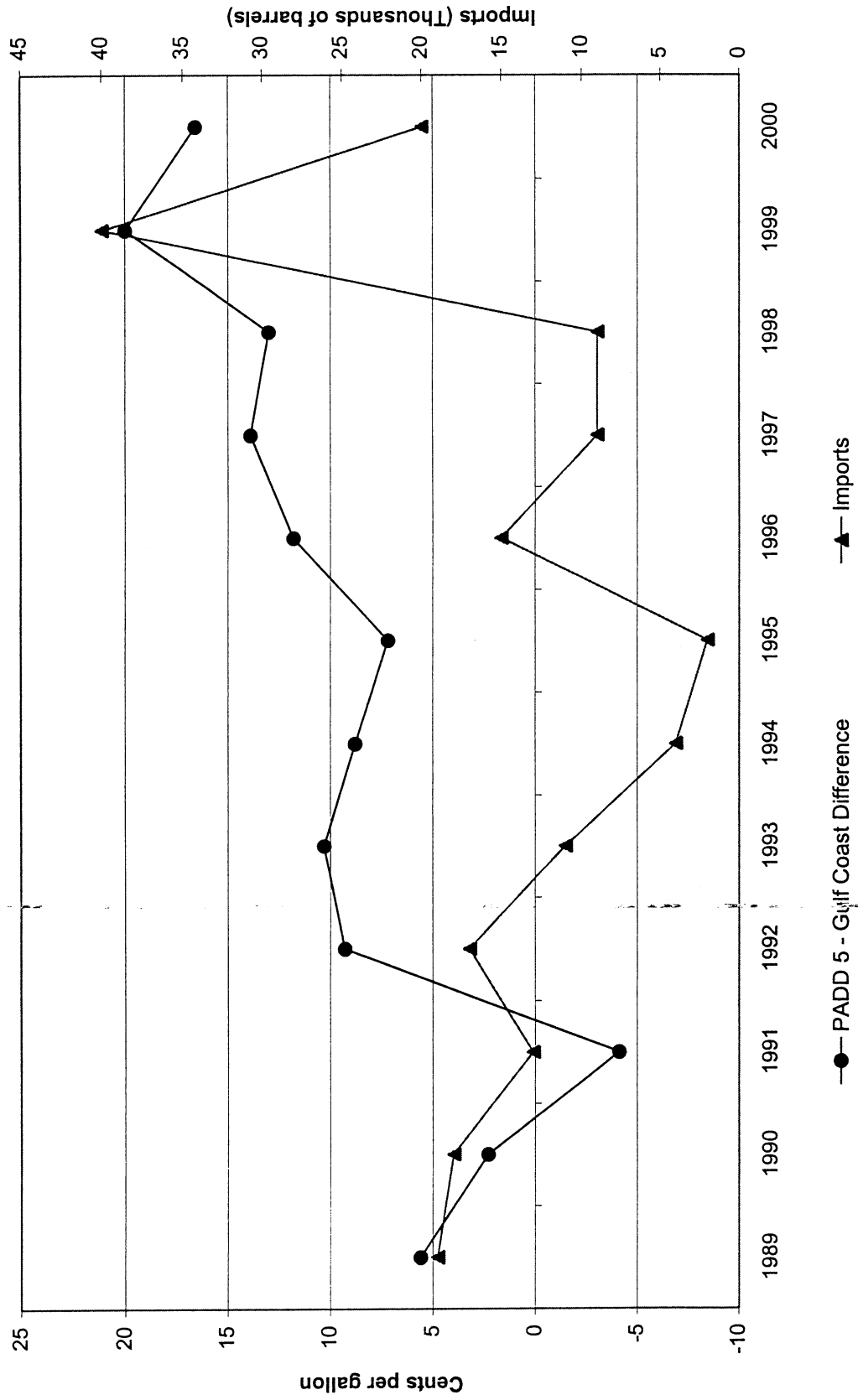
TOSCO ESTIMATES PER THIS SLIDE THAT IT IS THE 3RD LARGEST GASOLINE PRODUCER IN PADD V AND THE 5TH LARGEST IN CALIFORNIA. TOSCO INTENDS TO DEVOTE ITS PADD V SUPPLY TO OUR RETAIL SYSTEM AND CUSTOMERS WHO WANT A LONG TERM ARRANGEMENT WE WANT TO AVOID AS MUCH AS POSSIBLE SPOT SUPPLY ARRANGEMENTS. IF I WERE A CALIFORNIA RETAILER AND DIDN'T HAVE A WIDELY RECOGNIZED BRAND WITH A STRONG PADD V REFINING SYSTEM BEHIND IT I'D BE WORRIED. WE ARE HERE TO ELIMINATE WORRIES!!

ON THAT NOTE, I'LL BE HAPPY TO ANSWER YOUR QUESTIONS.



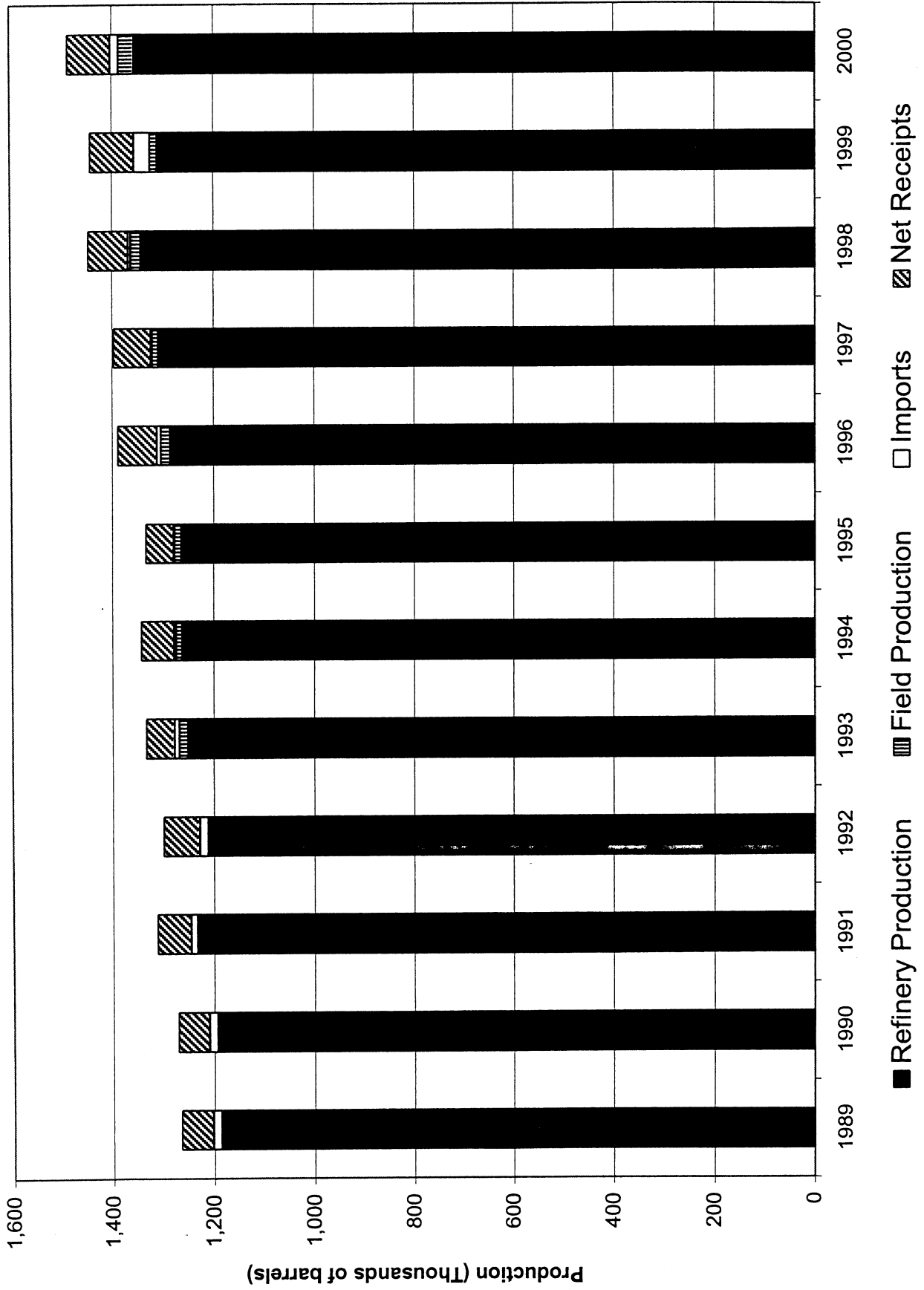
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**Figure IV.5: West Coast - Gulf Coast Price Differences and
West Coast Foreign Imports, 1989 - 2000**



Note: Gulf Coast price difference based on average retail price in Texas.
Source: DOE/EIA.

Figure IV.6: PADD 5 Gasoline Production



Source: DOE/EIA.

Figure IV.7: Average Annual Price Net Federal and State Taxes by Petroleum Administration
for Defense District (PADD), 1984 - 2000

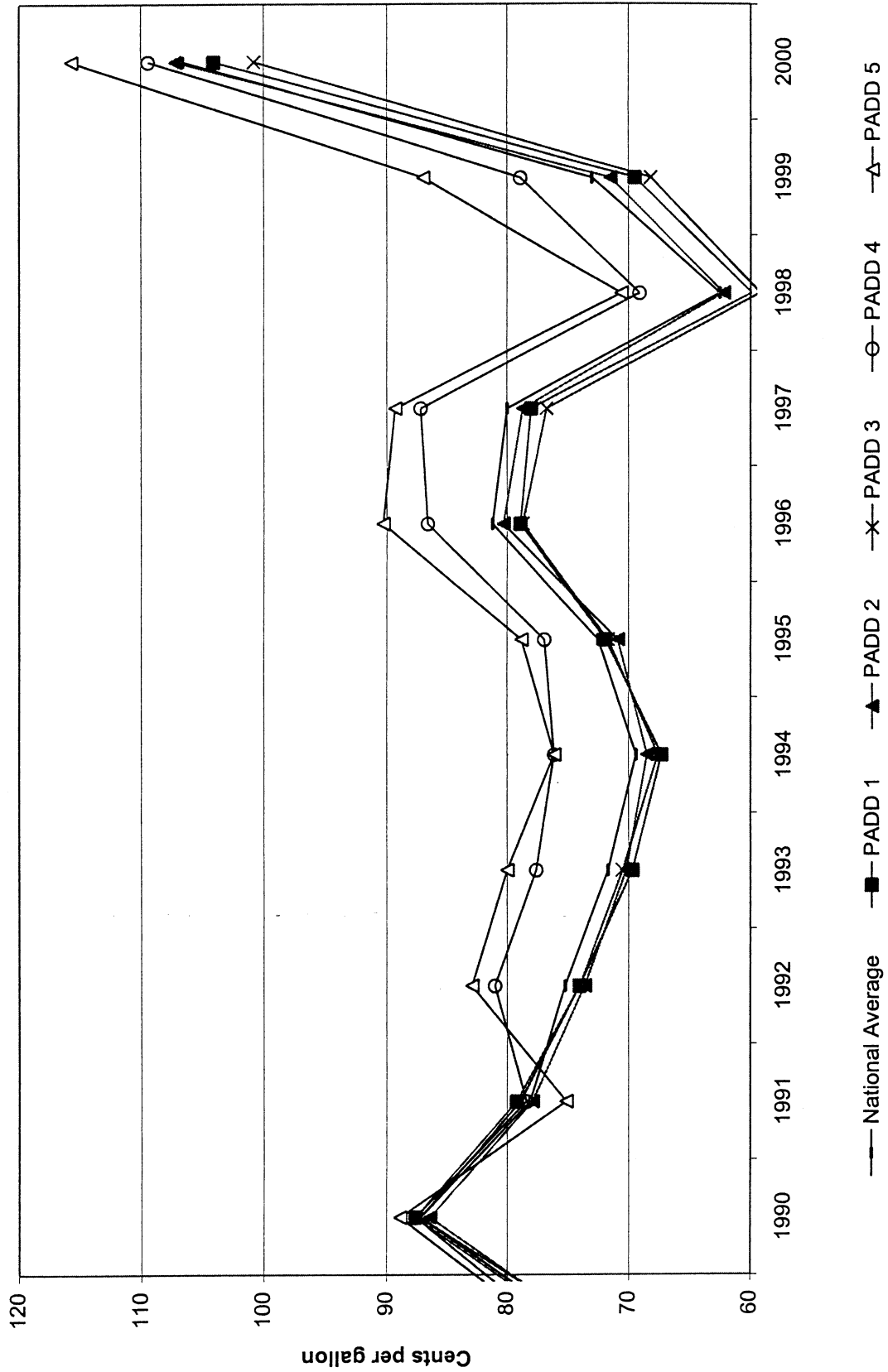
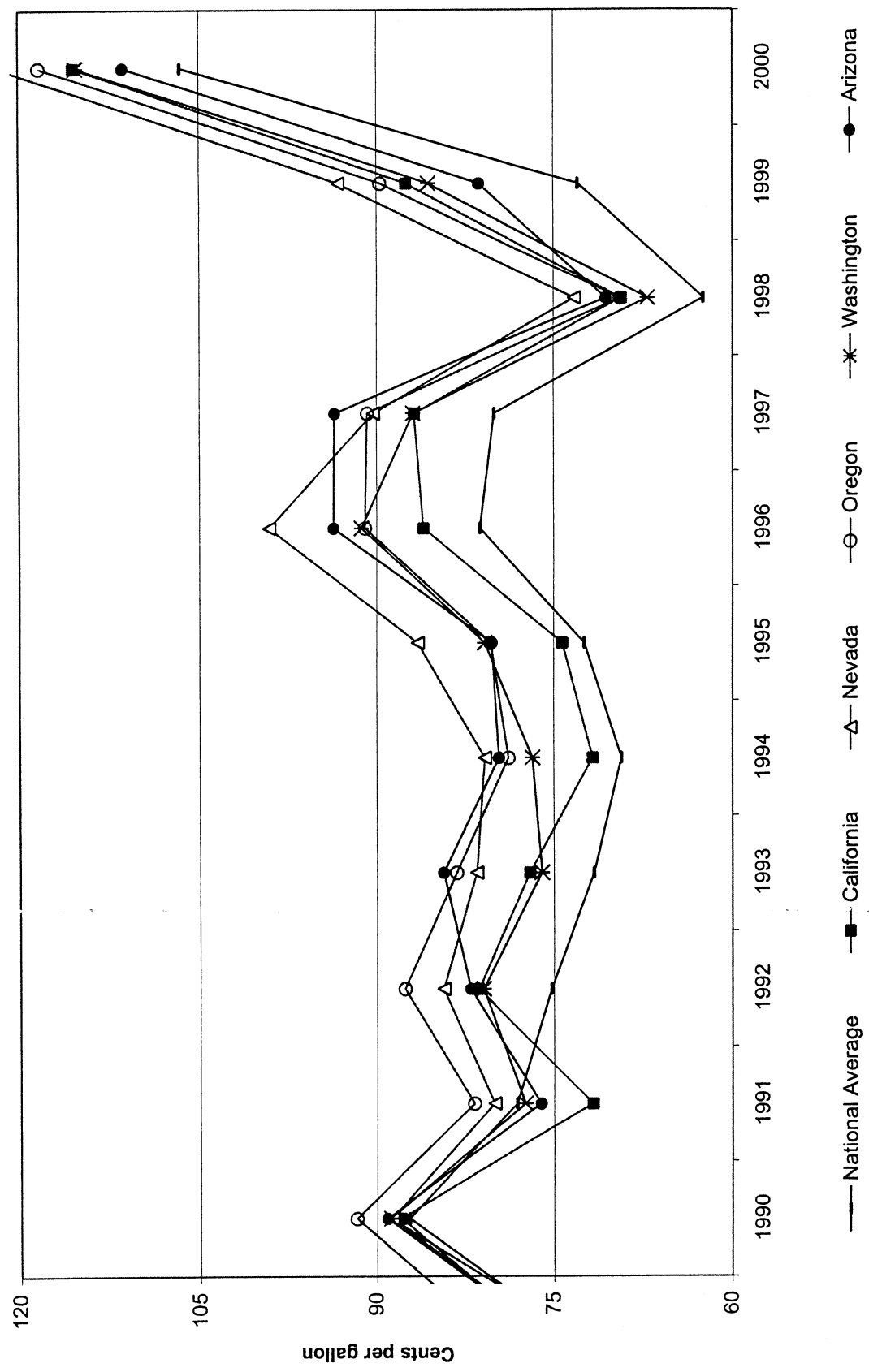
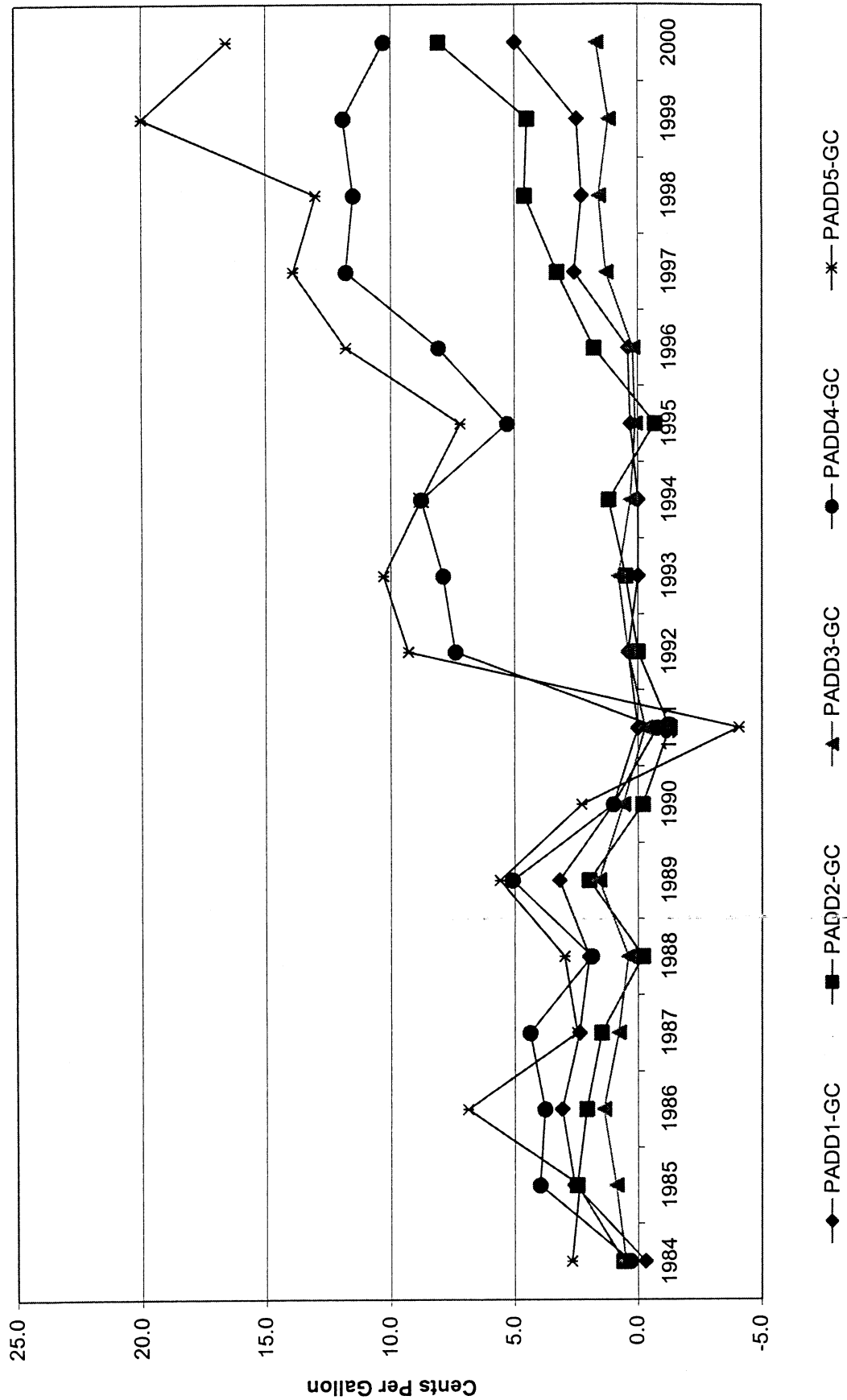


Figure IV.8: PADD 5 Gasoline Prices Net Federal and State Taxes, 1990 - 2000



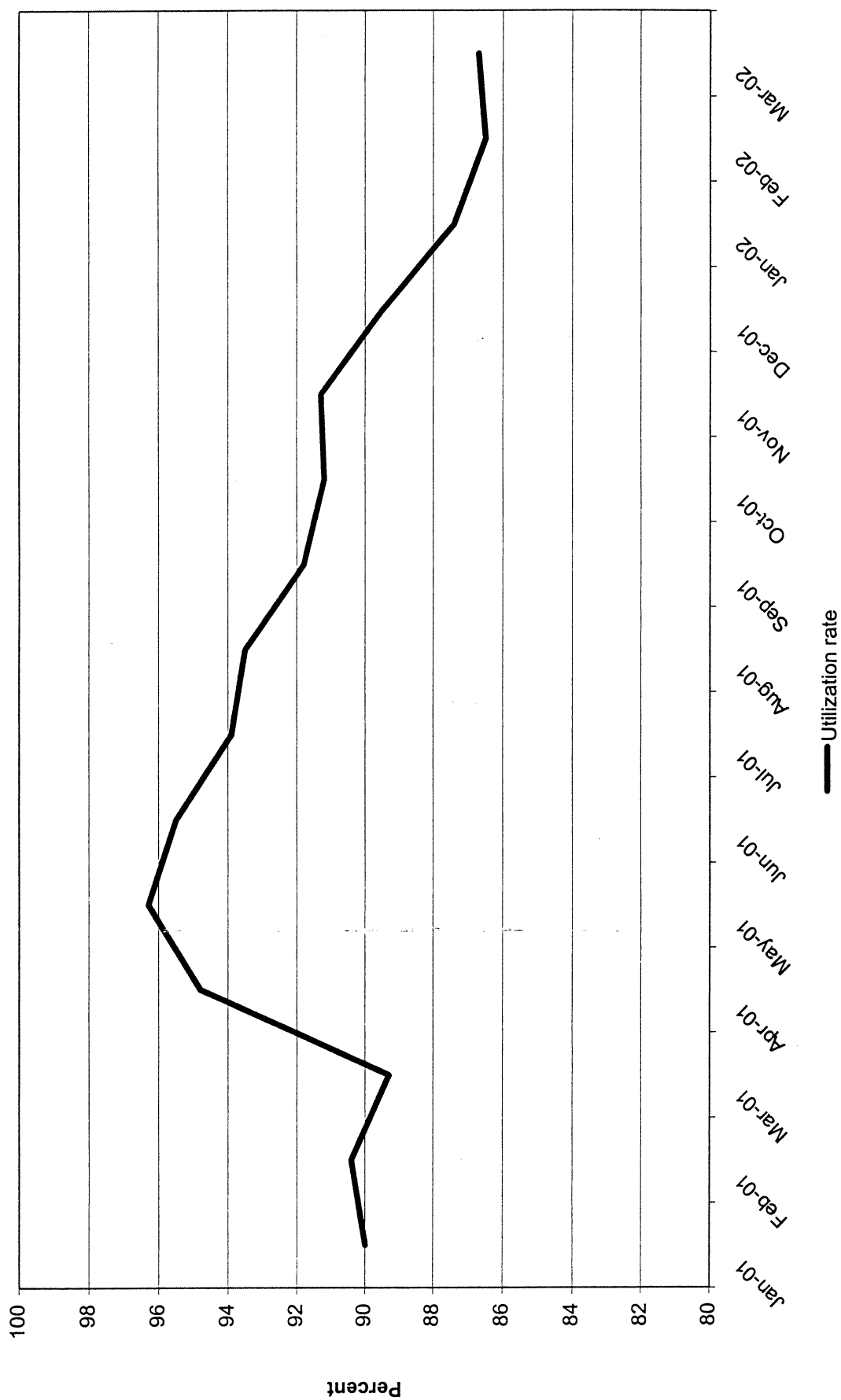
Source: DOE/EIA.

Figure IV.9: U.S. Regional Differences in Prices (Net Taxes) for
Regular Unleaded Gasoline, 1984 - 2000



Note: Gulf Coast price reflects average retail price in Texas.
Source: DOE/EIA.

Figure IV.10: Refinery Capacity Utilized, January 2001 - March 2002



Source: EIA

SUMMARY: SHORT-TERM PRICE OUTLOOK

Marathon Oil Company

Economics

As OPEC and other exporters' efforts to rein in output began bearing fruit, Nature stepped in to lend the oil producers a helping hand in the form of Hurricane Georges, which caused some major refinery closures, threatened off-shore oil production and imports, and generally lent some bullishness to the oil futures markets. However, this storm induced optimism is likely to prove temporary, leading to some pullback in prices prior to the heavier worldwide demands for crude in late Fall and early Winter.

OPEC compliance with the agreed reductions in output this year have been estimated in a range of 80% to 85%, which means the organization is acting as much like an effective cartel as it ever has. A \$2 per barrel price increase in the first half of last month is the result of their resolve, but also a demonstration of the remaining bearishness and demand-side weakness in the market. In more typical times, the price reaction to a removal of over 2 million b/d from the world oil market would have been more significant.

Growth in U.S. oil demand remains favorable, with gasoline up almost 2 %, year-do-date, when upward revisions to data from the second quarter are included. Distillate and residual fuel demands are likewise well ahead of a year ago, with only kerojet among the major products suffering from inexplicable weakness. Other oil demand suffered from a warm first quarter, weakening in the petrochemical industry, and the delay in the reauthorization of the Intermodal Surface Transportation Efficiency Act, which has now been signed into law. Final figures are likely to show healthy growth in U.S. demand this year, but this cannot make up for the loss of oil demand growth from East Asia, and the market remains skeptical that exporters have reduced sales sufficiently after their monumental miscalculation early this year.

The onset of heavier world-wide crude runs in the fourth quarter in preparation for the Northern Hemisphere winter should tighten crude supplies noticeably, lifting the WTI spot price to \$16.50 per barrel in January and February, after the initial post-storm pullback.

Year-over-year gasoline demand growth in August is reported to have been 4.3%, and has not slowed much in September. Gasoline stocks do not appear to have begun an upward climb, as they can do at a time of seasonally lower demand and rising output potential with the advent of higher allowable RVP, which facilitates greater NGL blending. Indeed, the difference of the gasoline stock level over last year has now narrowed to 14 million barrels. Turnarounds and other refinery shutdowns have not had their expected impact on gasoline output as yet, but there is normally a lag between the two, and output should slide soon even with higher NGL input. Hence, we expect little additional weakening of gasoline relative to crude until December, when runs pick up once more. Gulf Coast spot unleaded regular gasoline is forecast to average 41 cents per gallon this month, rising less than crude to 42 cents in December. The price differential for 93 octane gasoline over regular has narrowed to 3.5 cents per gallon, and should remain close to this value through the forecast. The differential for RFG will average under 2 cents a gallon through February.

Distillate demand is preliminarily reported to have settled down to a more sustainable 3% growth rate in September, after the 12% of August. Because of unusually heavy demand last October, it is even conceivable that distillate demand will be lower this month than a year ago. Nonetheless, distillate demand continues strong, which together with an imminent decline in output due to refinery shut-downs, offsets the impact of inventories that remain about 17 million barrels above last year. Assuming normal weather, distillate prices are forecast to increase only slightly relative to crude oil, with the Gulf Coast spot high sulfur distillate price averaging 41 cents per gallon in October, and rising to a high of 45 cents in January. The price premium for low sulfur diesel is expected to contract from just over 2 cents per gallon recently to about 1 cent per gallon around year end, as the market's focus turns toward heating oil.

BP Amoco



EXHIBIT IV.15

274

Midwest / Mid Continent Strategy

Meeting with BULs

1st June 1999

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Agenda

- Introductions
- Events leading to today's meeting
- Today's objective
- What we know
 - BUL interviews - common and divergent views
 - brief recap of 4/30 presentation
 - other initiatives underway/Market threats
 - market levers
- Case study [REDACTED]
- Value creation
- The way forward
 - process
 - terms of reference - deliverables

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Recap of 4/30 presentation - Key learnings on niche structure

We can influence niche value (1-3cp/g) but our actions need to be significant (>50 mbbbl/d) to be sustainable (3 years+)

- There are several drivers which work together to determine the value of the niche :
 - Prices (and therefore asset value) in the Midwest / MidCon are set by the supply / demand in relation to logistics capability
 - Supply / demand balances are driven by macro-economic issues such as crude prices, crude field decline rates, economic growth
- When the niche is not present, Midwest refiners need to be able to compete on a cost and operational basis with the GC refiners.
- Opportunities exist for differentiation by improving business outside mainstream fungible products. [REDACTED]
- There are significant opportunities to influence the crude supply / demand balance [REDACTED]
- Good market intelligence is critical to understanding market behavior

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Recap of 4/30 presentation -

Niche characterization - summary

Historical Observations :

• Products

- In the summer (May thru Sept), MW / MC product prices are set by incremental barge economics.
- A barge-related price is not sustainable - pipeline capacity can / will increase over time
- In the winter, local refinery economics set product prices

• Crudes

- In the winter, heavy Canadian crude costs into the MW / MC tend to be lower than GC crude plus transportation
- Costs of heavy Canadian crude in the summer, and other crudes year-round, are likely to be rational with GC crude costs plus transportation in a low crude cost environment
- Canadian heavy crude production is sensitive to overall crude price levels (with recent months an example of production cutbacks)

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Recap of 4/30 presentation - Summary

- Niche value potential varies widely over time. It is reasonable to expect that incremental value can be extracted by BP Amoco in the future.
- Markets are not constant. There are numerous supply / demand balance dislocations within an environment of finite transportation options. We can benefit by pro-actively managing our response to dislocations in real time.
- Creating value through market "knowledge" and integrated market actions is consistent with our desire to move to a knowledge based organization. Additional value creation may be independent of capital employed.

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Market levers - product short (1)

• Shut down niche internal supply

[– Offer supply agreements in exchange for capacity shutdown

- Purchase capacity and shut it down
- Lobby for elimination of oxygenates/tax breaks for same
- Seasonal (winter) idling of capacity/corresponding winter import of product
 - Firms winter market AND secures large summer import volume
- Low sulfur product requirements reduce production.
 - Eliminate exemptions for small Refiners.
 - Patent formulations to make niche production more expensive re: CARB fuels
- Compliment shutdown of internal niche supply with investment in import pipeline

• Increase product demand

- Lower prices
- Convince swing cities on Gulf Coast supply to require reformulation that is not readily available from Gulf Coast
- Incent “boundary” areas to buy supply from niche
 - Sell out western V system by using Milan line.

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Market levers - product short (2)

- **Export products from Midwest niche**
 - Create “Koch” style fly wheel markets
 - Kansas City, Pittsburgh, St.. Louis, Indianapolis
 - Move product into southern Ontario
 - Use Xylene line or others to move product south or out of area
- **Fill import logistics**
 - Ship crude substitutes and/or intermediates/blendstocks on product lines
 - Condensate, naphtha, light gasoil, BTX, oxygenates, raffinate, alkylate, etc.
 - Don't incent pipeline conversions to products
 - Threat of swing cr seasonal production to deter
 - Incent Koch not to ship into Chicago market??
 - Lobby for elimination of DRA for environmental reasons
- **Change behavior of shippers to support niche uplift**
 - Implement market based tariffs.
 - Raise tariffs
- **Reduce product inventory in niche**

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